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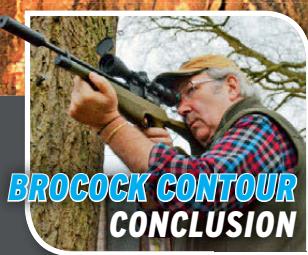


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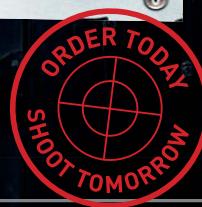
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VOLUME 37 ISSUE 8

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Subscription queries? Tel 01858 438840
Overseas: +44 1858 438840
Online: www.airgunshooting.co.uk
Email: archantspec@subscription.co.uk
Write to: Airgun World Subscriptions,
 Tower House, Sovereign Park, Lathkill
 Street, Market Harborough, Leics LE16 9EF

PRINTING/DISTRIBUTION

News distribution: Seymour,
 86 Newman Street, London W1T 3EX.
 Tel 020 7396 8000
kate.scof@seymour.co.uk
Printed in England: ISSN 1741-1939
Printing: William Gibbons

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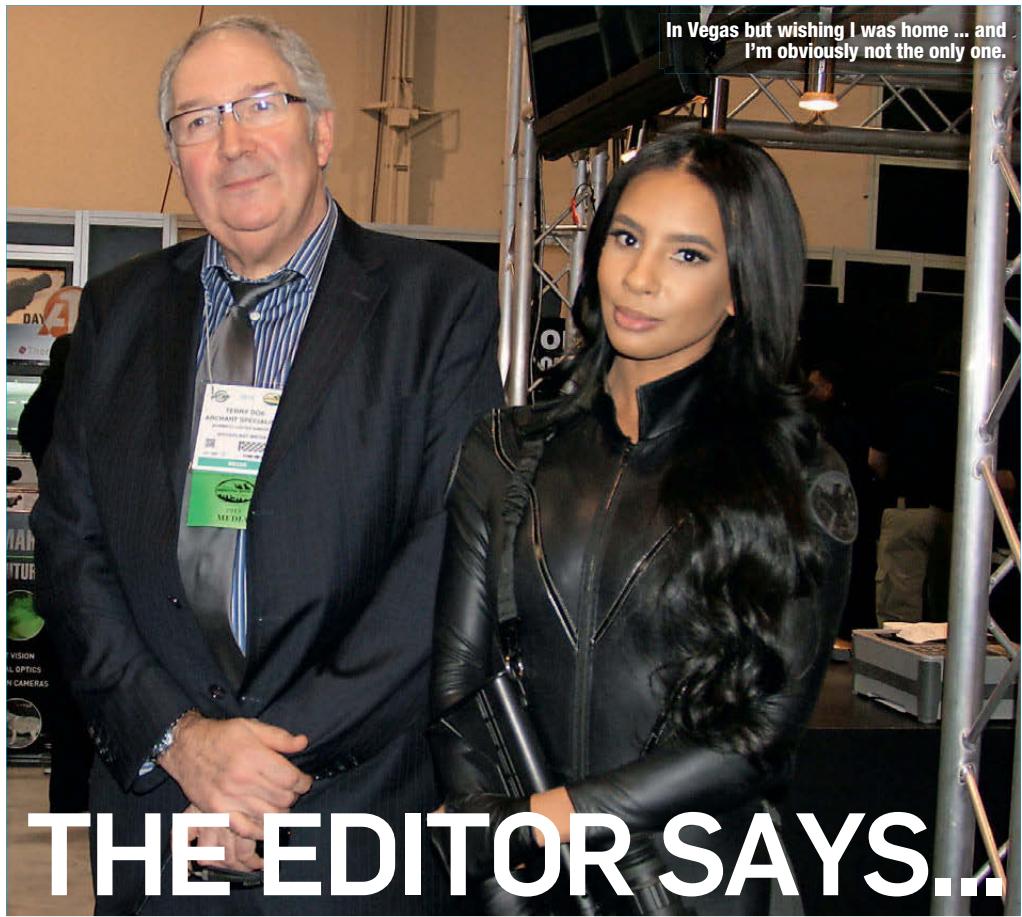
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In Vegas but wishing I was home ... and I'm obviously not the only one.

THE EDITOR SAYS...

I'm not the best at scheduling, planning, or even being organised, but this month I really thought I had everything nailed down. I had the new BSA Gold Star to test, two follow-up tests to do, one on the Brocock G6 and the other on the ATN X-Sight, plus a week out in Las Vegas for my annual pilgrimage to the S.H.O.T. Show right in the middle of everything. I needed to be organised, and I was. Everything was time-framed and arranged to the hour, and the decks were cleared for everything but essential action. Then it all fell apart a bit.

THE ACCURSED MAN-FLU

First, I inherited Technical Editor, Phill Price's man-flu, only it was far more severe in my case, obviously. I also managed to step off the stairs at home a full three steps from the bottom, knackered my knee and re-breaking the ribs I wrecked in that motorway crash in Belgium last year. Broken ribs and a hacking cough - great combo. Still, the show must go on and I bombarded myself with painkillers and antibiotics to make the S.H.O.T. Show feasible, but getting out at night with the X-Sight was an absolute impossibility. I was

just beginning to feel sorry for myself when I heard the worst possible news about two airgunning greats who had been battling serious illness.

LEGENDS LOST

John Ford, founder of SportsMatch, and Airgun World's own Professor Mike Wright had passed away within days of each other, and our sport had suffered a double-blow. Both men could legitimately claim the title of 'genius', although neither would have dreamed of doing so. John and Mike were modest men, with absolutely nothing to be modest about, and their passing leaves our sport very much the poorer. We were privileged to have them for as long as we did, and their legacy will remain as long as this sport exists, but for now they'll be mourned by their friends and family, and to them we extend our deepest sympathy.

On page 47, where we'd planned to have the follow-up feature on the ATN X-Sight, you'll find a tribute to John and Mike. That X-Sight is an amazing piece of technology and it demands a thorough investigation, so while I was incapacitated, I loaned it to

Paul Howell, once a regular within these pages, and he's been working his way through its long list of features. 'I've been videoing muntjac deer!' was Paul's last X-Sight update, which is all very fascinating but a little off-piste for the needs of our readership, so I'll be joining him for the duration of the test, and I'm every bit as keen as he is to see what the X-Sight can really do.

SEE YOU AT THE SHOW

This really is the show season, with the British Shooting Show coming up within days of this edition hitting the stores, then it's IWA in Nuremberg during the first week of March. We hope you'll come and say hello at the BSS, and if there's anything we can do to help your shooting, or improve this magazine, please don't hesitate to ask.

All the best, and if I don't see you at the show, I'll see you right here next month.



Editor

THIS MONTH...



**Bullseye
Bargains!
Reader Ads
P80**

EVERYDAY HUNTER

Nigel Jones' plans come together underneath his woodland feeder **p43**

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Show your support for the sport and become a member of BASA

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Support your sport and become a member of BASA

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Technical Airgun



Loose Torque

Jim explores what causes a springer to have a funny turn **p73**



Exploring the transfer port

Mike Wright continues to look at the transfer port? **p75**

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DUCKING THE ISSUE

After reading your great article 'Carri-on Hunting', it reminded me of a problem I had last year. I have a few miniature ducks and they are getting on a bit now. Two are partially sighted and the crows kept going into their house and stealing their eggs, giving the poor ducks a fright at the same time.

I heard that if you hang up a dead crow, it warns off the others so I used some rabbit bait and after a few hours I managed to get one, hung it up and went to bed. The very next day it had gone; the resident badger had him for supper, I suppose. Still, it gave my gooseberry bushes a day off.

What I wanted to ask was, does it work? Are crows deterred by this? Keep up the good work.

PAUL FELTHAM

AIRGUN THERAPY

I would like to tell you a story about why I love airgunning and what it's done for me. Around three years ago, I lost my mother to cancer, which affected me deeply, and after her death it fell to me to care for my 86-year-old father who suffers with dementia. This involves regular 200-mile round trips to tend to his needs and to ensure his safety and wellbeing. As a result of these regular trips, I gave up my business because I couldn't cope with running a garage along with everything else.

Financially, giving up work has all but ruined me, and brought on months of depression and the use of prescription anti-depressants. Now, you may be wondering why I'm telling you all this, but trust me, there is a point I wish to make.

Around this time last year, I bought a £100

springer (a Hammerli 550) and joined a local club, Buckley Wood, in Devon. I have met some great people there who welcomed me with open arms and I can honestly say that it has changed my life for the better. The club is in the middle of nowhere; there is no phone signal, it's surrounded by wildlife and provides me with very cheap, safe fun. When I feel like I'm having an off day, I take myself to the club for a couple of hours and my troubles disappear.

My wife's attitude towards shooting changed after she came with me and acknowledged the safety of being at a club, and my 10-year-old daughter comes along too, and loves it. One day I hope to try HFT and I love the fact that there are no age barriers to this wonderful pastime. I don't hunt yet, but have been offered a shared permission. I'm not sure I have the stomach for it though, and I certainly wouldn't attempt to hunt until I became a better shot.

I'm an ex-mechanic, so I'm a natural tinkerer and, so far, I've stripped the gun, de-burred it, polished and lubed, fitted a tuning kit, trigger and an adjustable butt pad. What a difference! Being able to bring the gun up to my eye level, rather than lowering my head, has worked wonders. Why is it only the superguns have them as standard? Anyway, who would have thought a £100 air rifle could change a person's life!

Now to the magazines; I love them, great

LETTER OF THE MONTH

WIN THE JACK PYKE HUNTERS BOOTS

I wonder if I'm your longest-serving reader? I've been getting Airgun World since the very first issue of August 1977, although I'm sure it actually came out in July, because I got it the day after my 55th birthday. You can work out my age from that, because I've long since given up counting, but I can honestly say that I've never missed an issue and I've found something interesting in every single one.

I'm not as active as I was and my hunting days are over, but I get out in my garden at least twice a week and shoot my Air Arms S200 and my vintage BSAs, a couple of which are even older than I am.

I still walk the dog, even when she's creaking more than

Thanks to the generosity of the people at Jack Pyke, we're able to give away a pair of the brand new Hunters boots every month to the reader we consider to have sent the best letter. That's 120 quid's worth of excellent footwear, just for letting us know what's on your mind. You've got to like those numbers!

So, have a think about what you want to say and get in touch, by email or letter. Don't write pages of text because we'll have to be purely yours. State shoe size and

address, and it's great if you can include a photo, too. I promise we read every communication we get.

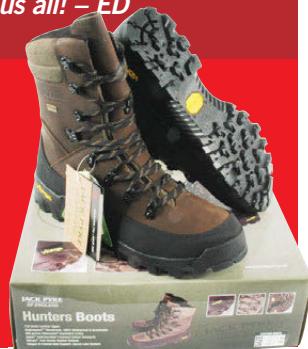
If your letter wins, you'll get these superb boots, which feature full grain leather uppers, a Vibram Trek Hunter rubber sole, a 100% waterproof, breathable, Hydroguard membrane, odour-resistant Agion antimicrobial inners and Thinsulate liners. There's even more to these amazing boots, as you'll find out when you win a pair. Good luck!

I do, and I'm sure that my love of airgun shooting and the country life has kept me as fit as I am. I see people 20 years younger than me who don't get about nearly as much as I do.

Thanks for all you and your magazine have done for me over the years, and here's to more of the same.

JOE SMALL

Good on you, Joe, and we hope you enjoy your new Jack Pyke boots, my friend. As soon as you've worn them out, give me a shout and we'll send you some more. Stay active, Joe, you're an example to us all! – ED



Something on your mind? Send us your letters and we'll share your views with the readership. Write to: Points Of You, Evolution House, 2-6 Easthampstead Road, Wokingham, Berks. RG40 2EG. Or email terry.doe@archant.co.uk

advice and articles, although a little more for beginners would be appreciated. I still can't wait to get them as soon as they hit the shelves, which leads me to a small gripe. I buy Airgun World, and the following week Air Gunner comes out, usually in a '2 for 1' bag which contains the Airgun World that I bought the week before. You can't see what's in the bag, and our local WH Smith only has a couple of copies each month, so you have to get them quickly. This has been happening for the last six months, at least. I know it's not down to you, but to the publishers, but have a word please. Personally, I would rather have much older issues included so we can see how things have changed over the years. I can't be the only one who has experienced this. Thank you for taking the time to read this, Terry. Writing in is not something I would normally do, but if my story encourages others to take up this wonderful sport, then it's been worth it.

GLENN GRACE (A.K.A BIG FRIENDLY GLENN)

Thanks for the kind words, Glenn, although I think you may have misunderstood the purpose of the free magazine promotion. We bag a free magazine to let our readers see what our other magazines have to offer, and the best way to do that is to show them the latest version, rather than something that will have changed. Far more importantly, I'm so glad this wonderful sport of ours has had such a positive effect on your life, Glenn, and all at Airgun World wish you the very best for the future. – ED

We supply two mags to let you see what we can do.



HAPPY CONVERT

Last summer, I went for a coffee with my girlfriend over at my local park. It's always busy and has a playground, a fishing lake and so on. On the way, we stopped off to buy a magazine each and, out of the blue, I saw Airgun World. I enjoyed it so much that when I got home I subscribed to it, and now I can't wait to read it every month. That first issue featured the new Remington Express, which I now own, but unfortunately, I missed half your articles on how to shoot a springer. At the moment, I'm shooting 25-yard targets in the garden and gradually accumulating clothing so that I'm able to join a club, and go hunting. What I would like to know is the correct way of preparing rabbits, pigeon and squirrel to eat. I love the magazine and I'm now hooked on airguns and shooting.

MICK DESMOND



Remington's Express is a popular rifle.

EFFORT EQUALS REWARD?

This question is probably a non-starter, but can I refill or top-up a diver's bottle for my Regal from my Webley Accupump? My budget is now so limited that even the few quid it would save would keep me shooting.

PAUL

Paul – pumping the Regal will be fine, but filling, or even topping-up, any divers' tank with a manual pump will be a daunting task to say the least. The Accupump is designed to charge airgun reservoirs, rather than

Filling a bottle with a pump would be hard work.



divers' tanks, so I'd say it's not a practical proposition. – ED

RABBITS ON THE RUN?

With all this rain, and full drainage ditches, my permission is in its annual sorry-looking state, with a high water table and lying water, making a lot of burrows unoccupied. It even becomes to wet to use ferrets. I don't have the luxury of the high ground further up the Sussex Downs, which drains very well because it is chalk; the distance is probably on the thick end of half a mile away. I have plenty of rabbits throughout the spring and summer months, and deep into the autumn. Depending on how dry the winter is, they just seem to disappear. Even walking around with a shotgun, I don't see any. How far do rabbits wander if they become displaced by floodwater? Would they travel that half a mile or so to safety? There seems to be an awful lot upon the hills that I can see through binoculars.

Food for thought: I have also tried this month's recipe, 'Anglesey Rabbit'. A couple of ingredients were changed to please the household, but it was still good grub. The brace of rabbits I used were from a friend's permission though, because all of mine have gone AWOL.



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STEVE TUDOR

My sources confirm that rabbits will, indeed, travel considerable distances to avoid floods, Steve, and half a mile is not unusual. - ED

FANTASTIC FUN-GUNS

Having now thoroughly read the February 2015 issue, I came across an article on the XS78, which brought back happy memories of the two XS78DLs I once had before I 'upgraded' to true PCPs. I am now thinking of buying another '78 and make the same improvements that I did on the previous ones.

The blueing was left untouched because it was already of a decent, deep-blue standard. My improvements to the basic rifle were not expensive, but did make the rifle truly amazing to shoot, with its improved power and handling.

I changed the cylinder to one from the '79 capable of holding four 12gramme caplets, a hollow extended bolt probe, which raised its average power to 11.4 ft.lbs. All 'O' rings were changed to the new polypropylene ones, along with the addition of a barrel adapter to accept a 1/2" UNF moderator, and my own personal modification to aid wet weather grip (because there is no chequering), was a 300 x 300mm pad of 3mm sticky-backed closed cell foam sheet at the foregrip, and a thicker one of 5mm to the butt cheek piece. The rear one can be of a thickness that raises your eye level to that of the scope centre. I cut mine to an oval shape, which gave the rifle a neat 'custom' appearance.

The trigger, I simply took apart and polished the sears before giving it a coat of dry lube graphite. To enable the depleted caplet to be removed more easily, I lubricated the end cap 'O' ring and threads with silicone grease, because any remaining pressure tended to lock the cap tightly. I also made the vent hole in the front part of the caplet

cylinder a little larger, so that by unscrewing the end cap the remaining unusable CO2 vented quickly. I did that because I am averse to shooting any rifle or pistol 'dry'.

I wish I had photographed my creation because I think it would have been of interest. In closing, I do agree that this rifle is a really great 'fun' rifle and is the equal of many that are greater in price and not so readily or cheaply modified. Ah, if only they did a 'selected' walnut stock.

Nice article so now begins a search.

OUR BAD!

I would just like to say how much I enjoy reading Airgun World and Air Gunner. However, I have had some difficulties with Airgun World, Jan 2915 edition, and Air Gunner, February 2015 edition. In these magazines you have printed articles using a small typeface over a coloured and complicated design background. For example, Airgun World's 'Everyday Hunter'

and Air Gunner's 'Smallholding' and 'Booted Up'. This makes the legend almost impossible to read, even with the use of a magnifying glass. Is it possible for you to tone down the use of this type of background

and maybe use a larger typeface? This would make it so very much easier to read.

TONY REED

Sorry, Tony, and everyone else who contacted us, and as you'll see the required changes have been made. Thanks for getting in touch, and please don't hesitate to tell us what you want, and don't want, in your magazine. - ED

LIGHT RELIEF



When I arrived at my local gun shop (T J McAvoy in Standish) to collect my new Air Arms TX200, I realised that my headlight had gone, so I bought a new bulb from the motor factors, but the shop assistant was alone so couldn't fit it for me. As it was pitch black, the gun shop staff fitted my scope and loaned me a torch. Being a left-hander, I found the task more fiddly than usual and whilst I was struggling, a fellow shooter saw me and came to help. I was then able to make my way safely home to Warrington. It goes to show how friendly and kind members of our community are, and if you ever shoot through Standish, please stock up on supplies with TJ McAvoy.

ANDY

PREVIOUSLY ENJOYED

I look forward to reading my copy of Airgun World each month and drooling over all the nice, new, shiny things. The problem I have is that I can't afford them. Both rifles I've owned have been bought second-hand, and I don't have an issue with that, but what would be helpful to us who don't have lots of cash to splash out, is if you guys could publish a concise, old review of popular air rifles; i.e.



Webley Raider, AA S200, Harrier X, Rapid 7 ... You did something a while back with a Daystate, and it made for interesting reading. There are some great bargains to be had, and you could explain why these rifles have moved on and compare them to their new counterparts. One last thing, any chance of some more articles on prepping your kill? You started that a while back, but I haven't seen anything lately.

Keep up the good work.

NEIL MURRAY

A guide to buying second-hand, eh? Good idea, Neil. Meanwhile, a new series on quarry preparation is on its way, OK? - ED

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— Chris Whistler



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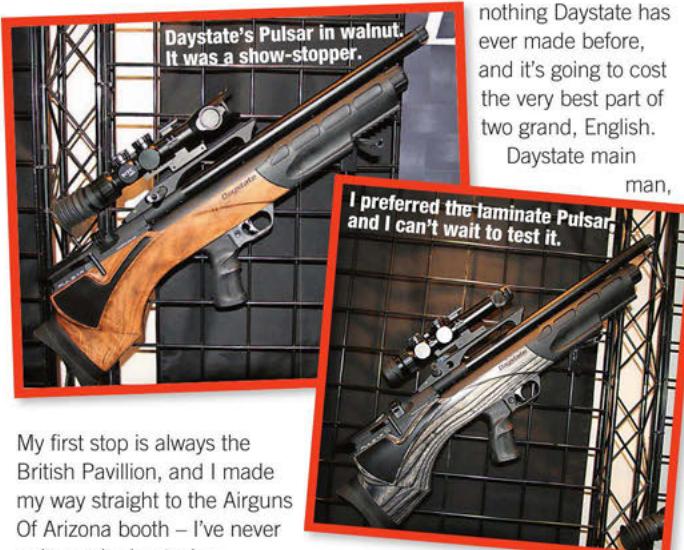
SHOT SPECIAL SHOW REPORT

Here's a selection of new gear the editor found at SHOT SHOW 2015

It's that time of year again when the shooting compass points to Las Vegas, and the Venetian Plaza opens its doors to the world's media. Inside, awaits the Shooting Hunting and Outdoor Trades show, known by its thousands of regulars as 'SHOT'. Here lies the entire world of the outdoors person, with hall upon hall of trade stands, features, exhibits and products covering every legitimate terrestrial pursuit, and quite a few extra-terrestrial ones as well, it often seems. The innovative, practical, clever and jaw-droppingly bonkers products stand shoulder-to-shoulder with those who invent, promote, use and market them, and airguns are right in there, too.

Let's see what I saw at this year's SHOT Show.

DAYSTATE'S NEW PULSAR



My first stop is always the British Pavillion, and I made my way straight to the Airguns Of Arizona booth – I've never quite worked out why

America's premier airgun outlet is always part of the Brit invasion, but hey-ho – and there was the SHOT Show's biggest airgun debut, the Daystate Pulsar. It's a bullpup, it's electronic, it's like

nothing Daystate has ever made before, and it's going to cost the very best part of two grand, English.

Daystate main man,

Pulsar as fully ambidextrous, with the ability to change the sidelever to the left-hand side in minutes. This no-compromise development also has a built-in laser, operated by the push-button safety catch, a spirit level, and a fully recessed information screen that already looks far better than the previous version.

The 'no-compromise' development strategy is exemplified by that sidelever, which is machined from solid, rather than stamped, and the Minelli stock options continue the theme. Synthetic inlays and fore ends relieve walnut and laminate, and, shock-horror-probe – Daystate has gone for a fully-shiftable butt pad. The Pulsar won't be to everyone's taste, and it certainly won't fit everyone's pocket, but I've bagged the first production model on test and I can't wait for that one.

»

JANUARY'S COMPETITION WINNER!

OUR JANUARY SPOT THE DIFFERENCE WINNER HAS BAGGED HER HUSBAND A FANTASTIC NEW HATSAN AT44-10 TACTICAL COMBO!

Ellie Collins from Derbyshire entered our January competition on behalf of her 'lazy' husband, Steve - Ellie's description, not ours! - and she won him a fantastic Hatsan AT44-10 Tactical combo. Ellie told us that Steve will have to decorate the bedroom before she hands the rifle over, but we think Steve's still got himself a bargain - not to mention a fantastic missus. Well done Ellie!

Q. In 'Such A Practical Tactical' on page 19, what is the best group Terry achieves with the Hatsan at 45 yards?

A. 24 mm



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P16**

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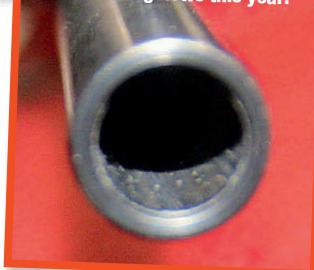
Model: ATP66. Fully adjustable

AIR FORCE TEXAN

The recurring theme among the airgun exhibits at this year's SHOT

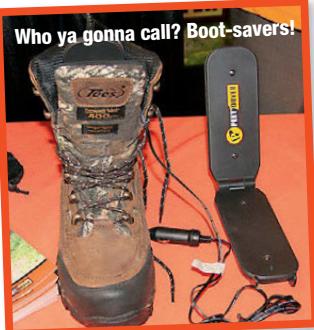


Big bore is big news this year.



Show, is big-bore hunting rifles, with FX Airguns, Daystate, Crosman and now Air Force showing off their super-high-power rifles. The Air Force Texan is based on the Gunpower Stealth format, and incorporates articulated sidelever cocking within its single-shot, .45 calibre format.

At a full 48 inches long, with 34 inches of that being barrel, the Texan is a full-on hunting rifle, and it produces an incredible 500 ft.lbs., and 1000 f.p.s., depending on bullet weight. Each 3000 p.s.i. charge of its 490cc air reservoir produces just three, full-power shots, but at this performance level that really should leave a competent marksman two shots to spare.



BOOT SAVER!

It's not all high-power, high-dollar innovation out here, and my eye

was drawn by something I found highly desirable that cost just 40 bucks. All it is, is a boot-drying gizmo that looks a bit like a modified set of hair straighteners, beloved of the modern lady, and the contemporary gent for all I know. Anyway, this excellent gadget comprises a couple of heating pads which slip into your

boots and radiate warmth. That's it, really, and because the power can come from the mains or a 12-volt supply, you'll never need to worry about cold, damp feet again. I just hope someone brings this product into the UK, that's all.

TED'S NEW FORUM

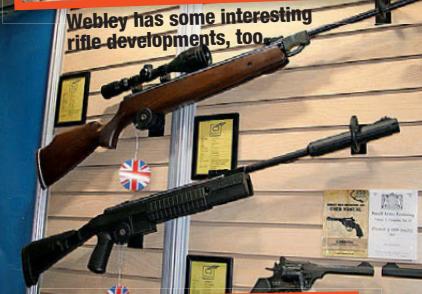
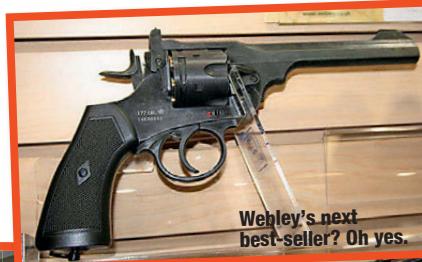
The SHOT Show is about people as well as product, and there's no more engaging show-goer than the internet phenomenon that is Ted Bier. Ted is the Ted of 'Ted's Holdover', and I always seek him out when we're in the same bit of America, although he'll be getting about a bit more from now on because he's launching an internet forum. My photo isn't the most flattering of my friend, Ted, but it captures him in the exact moment of his explanation as to what his forum will be about, and that's pure, positive, airgunning enthusiasm. Ted Bier encapsulates all that is good about our sport, and if his forum represents his own world view, as



I'm sure it will, then airgun shooting has itself a fantastic new platform for advancement. I'll bring you full details when I have them, so be prepared to sign up.

WEBLEY'S ON A ROLL!

Here's my tip for the best-selling pistol of 2015; the Webley MkVI 'Battlefield Distressed', .177 pellet-firing version. I'm no pistol enthusiast but I'll be having one of these. The BB version is already outstripping supply, and with the new leather holster, spare 'bullets' and speedloaders well on their way to the UK, plus some exciting developments in the Spectre rifle range, Webley should be busy this year. Look out for all of the latest Webley, and a ton of other top gear, on the Highland Outdoors stand at the British Shooting Show.



WEAR THOSE BADGES WITH PRIDE

I always see this distinguished gentleman at SHOT, and he's always super-enthusiastic about his sport and his industry. The sheer energy and enthusiasm at this show can be a tad overwhelming at times, especially for a shy English chap like me, but a five-minute chat with Winfred L Sumner – great name, great guy – puts our world to rights and always leaves me with a smile on my face.

BULLDOG SPIRIT

The Crosman stand is always a den of discovery, and this year, the .357 calibre Bulldog held centre stage. Its all-synthetic styling is 'futuristic' to say the least, although Crosman has opted for a mechanical powerplant, rather than the electronic action of its Rogue platform. The 5-shot, removable, rotary magazine is contoured to become a face-friendly feature, and this remarkable, high-power hunting rifle has already accounted for impressive bags of game in during its U.S. and African field trips.





The video-capture unit now lets you film your night hunting exploits.

NITESITE NEW STUFF

Back to the British Pavilion and a catch-up with the NiteSite crew and their latest 2-series nightvision gear. Here I saw the Viper, Wolf and Eagle models, with the '2-series' tag denoting the units' brand-new video capture facility. This compact box of tricks sits behind the camera unit and, depending upon the capacity of the micro SD card used, you can record between two and five hours of footage.

The control dial on top of the screen unit is now 'click-free', and the latest, featherweight 1.5 amp-hour Lithium ion battery will give a full seven hours of run time. NiteSite expect to roll out the new units in March, and the review will appear first in Airgun World as soon as the first production model is ready to go.

to be seen at SHOT, and this year's offering had been commissioned by the NRA from the world famous Orange County Choppers. With .50 calibre bullets set into the spokes and a superb paint job, plus the usual OC custom embellishments, this bike was up for auction, although sadly the Airgun World editorial budget wouldn't stretch to a realistic offer, even if I'd spent 10 years' worth in one go.



The subtle .50 calibre shells serve as a spoke enhancement.

MAD WHEELS

Still on the subject of ever-so-slightly bonkers wheels, how about a supercar with twin, .50-cal cannons, and a monster truck that costs way more than a reasonable house. I couldn't find out anything worthwhile about these mad vehicles, but the fact that there was a crowd around



Supercar with cannons, Sir? Not a problem.



There has to be a bonkers truck, and this is one, for sure.

them throughout the show proves that they did their job, I guess. Yet another 'only in America' moment, to go with countless others to be found out here.

INSTANT HIDES

I'll sign off from this year's SHOT Show with something entirely

practical, sensible and worth having in the hunting field. It's a pop-up hide that comes complete with imitation leafy twigs. The chap on the stand told

me he could have it set up in under five minutes, and that it can be adapted for everything from shotgun shooting to deer, hog and turkey ambushing. Windproof, rot-proof, lightweight, portable and

guaranteed for five years – the only downside was the \$400 price tag. Still worth thinking about, mind, if they ever come to the UK.

UNTIL NEXT TIME

Well, that's just a tiny selection from the SHOT Show 2015, and



by the time you read this, we'll be heading for the British Shooting Show, before the IWA Show in Nuremberg in early March. Look out for the videos of these on www.airgunshooting.co.uk and please come and see us at the British Shooting Show!



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QUESTION: In 'Star Turn' on pages 19-21, how heavy is the BSA Gold Star?
A. 4.2kg B. 4.8kg C. 4.7kg

BY
POST

Spot the six differences between the photos below. Entry costs just £1.50 per go – cheques and postal orders made payable to 'Airgun World' – and you can enter as many times as you like by photocopying the entry form. As a bonus; for every five postal entries you submit, you get one free – i.e six entries for just £7.50!



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ED'S TEST

STAR TURN!

It's the HFT rifle that's already a major winner for hunters

Who was it who said hunters should have all of the control advantages target shooters enjoy? Oh yes, it was me ... among others, for several years now. Those of us who felt strongly about this, clambered onto our soapboxes and chuntered on and on about how the potential performance of modern rifles had left their users far behind, and how it was high time that gap was closed by the interactive science of stock ergonomics. In short, let's make hunting guns with stocks that fit us better, so we can get more out of them.

Air Arms launched its hugely successful Ultimate Sporter, Hatsan has several top-selling models with adjustable stocks, and now BSA has released its brand new Gold Star SE, which I've been hauling round the fields and ditches of rural England for the past three weeks. Will it sell? It already has, and the big news

is, just over 75% of those who ordered it went for the .22 calibre, multi-shot version, which tells me that these owners are likely to be hunters. In fact, I've now spoken to several of those Gold Star owners and they are, indeed, of the hunting persuasion.

So, it seems that the demand is there, and I know beyond doubt that the rewards are there, too. Whilst a few traditionally stubborn types will resist the advance into full-control hunting guns, citing the sinful departure from classic sporting designs, the enlightened masses will take up their guns and shoot ... better than they ever did, because their rifles fit them, better than they ever did. Well done airgunkind; we've evolved a bit, and long may we continue.

THE BSA GOLD STAR SE
On the subject of evolution, the Gold Star SE's own development

came about when BSA's Simon Moore and Simon Barron visited Italian stock maestros, Minelli, to discuss the creation of a new flagship rifle. Armed with sketches, a wish list, and the proviso that, whatever emerged from the development program the new rifle had to look like a BSA, the Simons and the Minelli technicians worked on specifications and design ideas. Three stock finishes were required – Red, White & Blue, Black Pepper, and Walnut – and it was thought that having three designs would best lend themselves to the company's piled arms logo. What emerged was built around BSA's Scorpion SE powerplant, with several serious tweaks introduced, in the form of an 'enhanced' barrel, a new regulator, a re-vamped R10-type trigger mechanism, the latest magazine system and a neat-looking

»

'Well done airgunkind; we've evolved a bit, and long may we continue'

BSA's new flagship has already found favour with hunters, and rightly so.



Hunters need full control, too, and more of them are recognising this every day.



BSA GOLD STAR SE

The BSA Gold Star SE in its most popular format - the Salt & Pepper laminated stock.



significant input into the Gold Star, prefers the hamster this way round, too, so I'm not just being different for the sake of it.

Simon Howarth, another celebrated BSA HFT teamster, is a bit of a whizz with regulators, and he's had a fair say on the unit currently blipping out shots within single-figures of each other in the test rifle. On that consistent note, let's get to the practical stuff.

ON THE RANGE

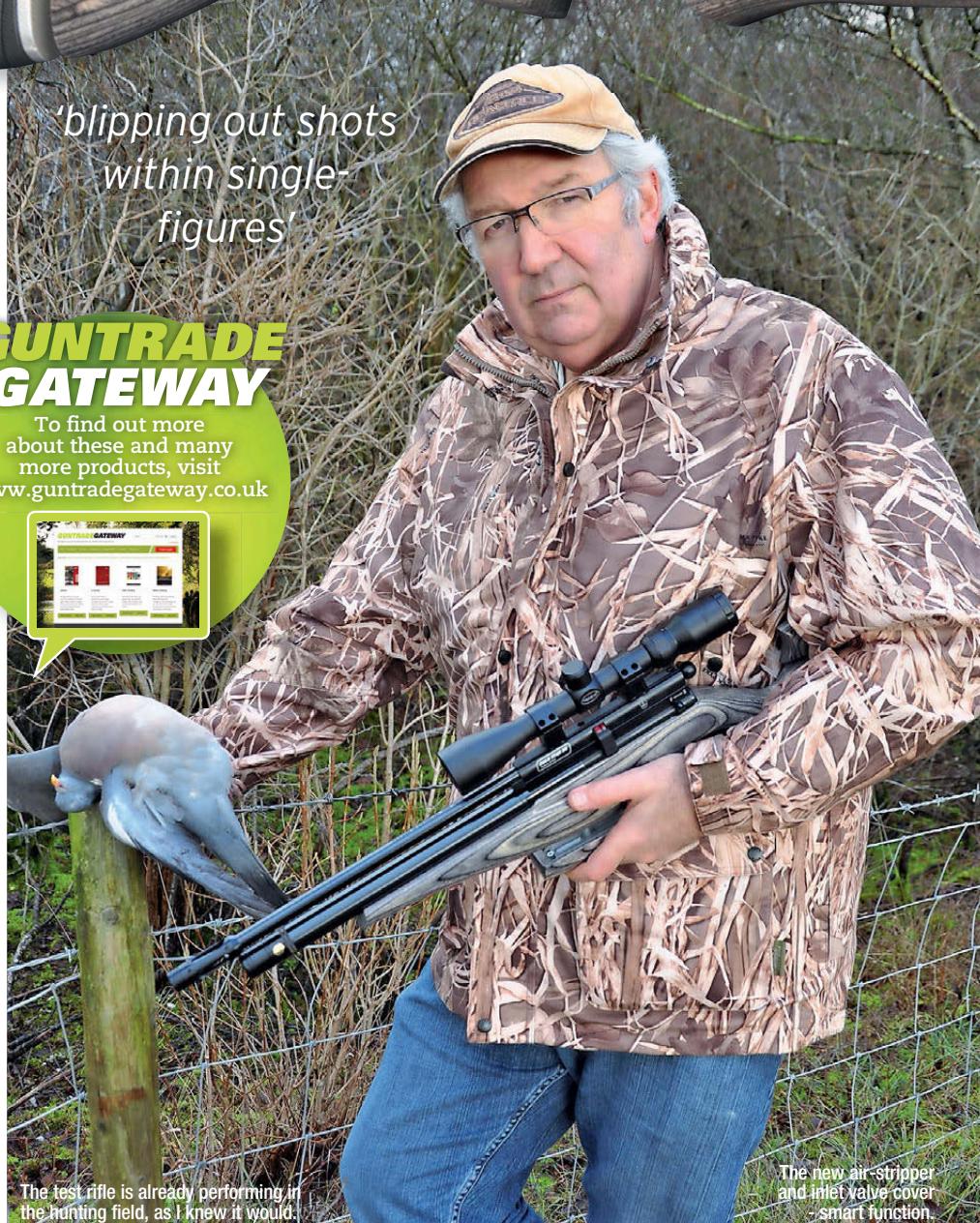
Charging is the usual BSA plug-and-play deal, and each instalment of 230-bar gets you 90 shots in .22 at 11.1 ft.lbs., and 75-plus in .177. The rifle on test is a .22, so the .177 output is factory info, although BSA told me what to expect from the .22, and that's exactly what it did.

These are regulated shots, so I expected impressive consistency, and that's exactly what I saw. In three, interminably dull, 50-shot chrono' sessions, the Gold Star returned an average variation of just 6 f.p.s., when I used my washed, lubed and sorted Air Arms Diabolo Field, and that figure increased by just three f.p.s. when I went with the same pellets straight out of the tin.

I'm not the world's greatest fan of regulators, preferring to keep the main mechanics of my airguns as simple as possible, but the Gold Star SE reg' does precisely what it says on the tin, and it will be interesting to see if anything changes when I complete my follow-up test next month.

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The test rifle is already performing in the hunting field, as I knew it would.

The new air-stripper and inlet valve cover - smart function.

air-stripper. On the stock front, we enjoy a wealth of positional options from the butt pad, cheek piece and hamster, that will perfectly accommodate shooters of every

reasonable size, and most of the unreasonable ones like me. The hamster can be reversed, too, and I did that immediately, at first because it looked prettier for the

photos, and eventually because I supported my standing stance better. Well-known HFT shooter, Roger Lait, who, along with his BSA HFT team mates has had





ACCURACY REPORT

In pure accuracy terms, I knew before a shot was fired that the Gold Star SE would at least match the Scorpion SE models I've tested previously, and of course it did. I pretty much reproduced the groups I'd done with the Scorpion and the R10, but there is a difference, and it could be significant. Simon Moore told me that the Gold Star barrel has been 'enhanced', and he refused to reveal the exact nature of this enhancement. Now, this could mean anything, or absolutely nothing, but what it meant on the test rifle was tight groups with more types of pellet.

Checking my test results on the Scorpion and R10 showed a preference for two or three pellets, whereas the Gold Star did extremely well with most variations of the JSB, plus H & N FT Trophy, some ancient RWS Superdome I keep in my test pellet box, Crosman Accupell and its derivations, and even Bisley Magnum, despite the latter's loopy trajectory. For some reason, it didn't like my favourite close-range pellet, the RWS Super H-Point, but that was about it.

From testing just one 'enhanced' barrel, it seems that BSA has made its own-brand barrels more pellet-friendly, and if this is so – I'd need to test a batch of rifles to confirm it – it means that, not only is the choice of potential pellets wider, but this

barrel should accommodate better any anomalies within a chosen batch. This really is a major advance, because it will help eliminate the infamous 'flier', which is potential disaster for hunters and HFT shooters alike.

This barrel configuration has been tested on the HFT circuit, so the 'barrel time' is well and truly in, and at the most demanding level. As far as stats go, I put in a pleasing series of 22mm diameter groups at 45 yards, plus a clutch of 15 to 18mm jobs at 35 yards, using Air Arms Field straight from the tin.

At the tip of the barrel is an air-stripper, designed by BSA's own Chris Dunn, and apart from looking all sorts of techno and cutting-edge, I'm assured that it does a cracking job of splitting the pellet from its surrounding air-blast, thus promoting stability as the pellet emerges from the muzzle. Hunters can unscrew the stripper and replace it with a moderator, and you can bet that most of them will do just that, despite the Gold Star SE's bark being unusually quiet, probably due to its regulated delivery. Then again, it could be something else entirely, but this isn't a noisy PCP, that much is certain.

MORE TO COME

A good barrel tied to a consistent powerplant needs only a precision trigger and accommodating stock to complete the set, and the Gold Star really is the finished article, or at least as far as this initial test shows. First, the trigger, which is



A newly-configured magazine system plus a more 'friendly' barrel, equals reliable performance with a greater variety of pellets.

Loads of options! The Gold Star's adjustable cheek piece, butt pad and hamster combine to provide fit, comfort and efficiency.



based on the R10, two-stage adjustable

mechanism and includes the back-forth, twist, and let-off options of that excellent unit, plus its ribbed aluminium curved blade. Whatever your sporting trigger preference, you'll find it here, and once found, you'll use it without conscious thought, which is how it should be. BSA's familiar manual, resettable safety lever is a right thumb prod away, and the rifle's entire grip set-up is as friendly to the hand as the barrel is to pellets.

Personally, I'd go with a deeper thumb scoop and I'd fit a discreet palm rest at the base of the grip, but those who watched me test this rifle mostly disagreed with me on these points, perhaps because their hands are of 'normal' size.

INITIAL VERDICT

I've deliberately left my in-depth assessment of the Gold Star's stock until next month, mainly because I know I'll have changed its configuration at least five times by the time I've finished with it and I'd like to give an informed and accurate report on how well it works. There's an updated magazine format to evaluate, too, and the best way to do that is to use it extensively.

Study the photos to see the type and range of stock adjustment available, and be assured that it will help any airgunner perform better, simply due to correct fit. I especially like the butt pad's adjustment effect, and I'll get into why next time around.

For now, what we have is a consistently accurate, reliable rifle that can be moulded to your requirement, and it's been tested by some of the most demanding shooters on the planet. The provisional results are looking



A re-vamped R10 trigger unit was the ideal choice.

TECH SPEC

Model: Gold Star SE

Manufacturer: BSA Guns

Country of origin: UK

Price: £899 – for multi-shot or single-shot version

Type: Pre-charged, 10-shot, bolt-action sporter

Calibre: .22, .177

Cocking: Bolt-action

Loading: Via removable, 10-shot magazine.

Trigger: 2-stage, multi-adjustable

Stock type: Adjustable ambidextrous, semi-match, laminated version

Weight: 4.2 kg (9.2lbs) Including scope, mounts and silencer

Length: 953mm (37.5ins)

Barrel: 394mm (15.5ins)

Fill pressure: 230 bar

Shots per charge: 90 in .22. 75 in .177. **Average variation over 50 shots:** 6 fps for .22 on test

Average energy: 11.1 ft.lbs.

Best group at 35 yards: 15mm diameter

Average group at 35 yards: 17mm

Favoured pellet of test rifle: Air Arms Diabolo Field

Other notable pellets on test: Daystate Rangemaster Li, RWS Superdome, H&N FT Trophy, Defiant, all JSB derivatives.

Options: Multi-shot adaptor for single-shot models - £40

Two further stock finishes – Red, White & Blue, plus Walnut

Custom options to come – bolt, trigger guard, air-stripper, trigger blade

Contact: BSA on enquiries@bsaguns.com

RRP £899.00

impressive, and I'll do my best to extract the best the Gold Star SE can offer. More importantly, I know my efforts, and what ever talent I have, will be fully assisted by a rifle that fits me – and every serious shooter deserves that. See you next month. ■



The celebrated BSA Bolas bolt-handle does its usual top job.



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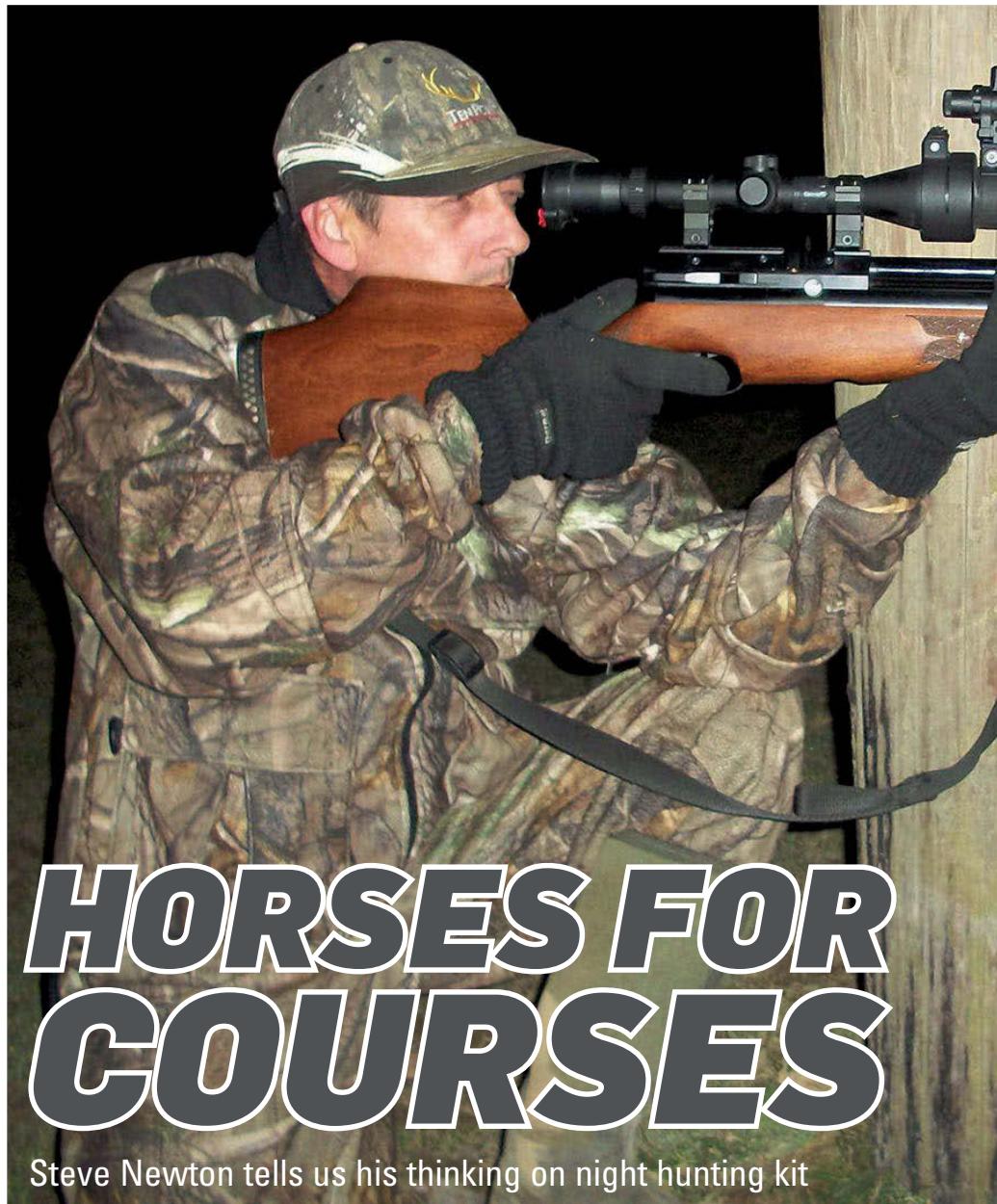
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HORSES FOR COURSES

Steve Newton tells us his thinking on night hunting kit

It's hard to think of March when you are writing in the middle of a very wet and very cold January. In my part of the world we have had torrential rain driven by gale force winds which means that many of the fields are under water and are

foxes and hundreds of hay-devouring rabbits to book over the last couple of months. It's not unusual for me to have a guest or a client out night shooting with me at this time of year, and one of the inevitable questions that I usually

which tactic I will use. I was reminiscing about the good old days (were they really good old days?) not so long ago, to a novice who has just joined the ranks of the would-be airgun hunter and was trying to explain just how

'... the closest any of us got to night vision was painting the foresight on my BSA Airsporter white'

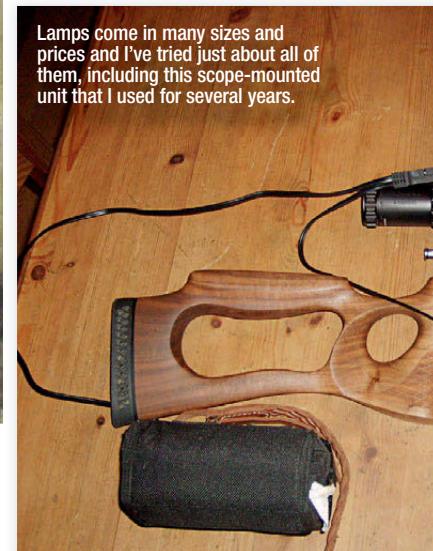
now resembling lakes rather than this year's coming crops. The good news to all this bad weather is that there have been some fantastic conditions for night shooting and the windy, cloud-scudding nights have been instrumental in bringing many wily

get asked is, 'what's the difference between lamping and night vision, and which is best?'

There's no easy answer to this question because each technique has its merits and its downfalls, plus the weather and ground conditions will play a vital role in

massively technology has progressed since those early days of night shooting when I was a teenager. Back then, I didn't even have telescopic sights and the closest any of us got to night vision was painting the foresight on my BSA Airsporter white so I could

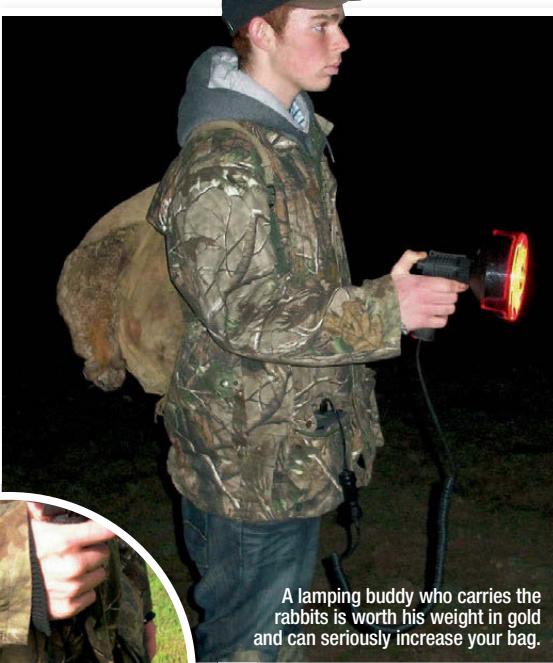
Lamps come in many sizes and prices and I've tried just about all of them, including this scope-mounted unit that I used for several years.



see it through the V of the front sight in low light conditions. With this set-up, I could shoot roosting birds silhouetted on moonlight nights, although successful shots on rabbits with the darker background of the fields were few and far between. Then there came Gen1 and Gen 2 night vision which transformed how we controlled vermin at night, for those who could afford them. Nowadays, I use digital night vision, which takes night shooting to a whole new level, for a price,



Now even hand-held units come with a battery small enough to fit into your pocket.



A lamping buddy who carries the rabbits is worth his weight in gold and can seriously increase your bag.

the shelves. If you wanted to lamp rabbits you had to make your own lamp out of a motorcycle headlight and a 6V, or sometimes even a 12V car battery. Twenty minutes with a soldering iron and a couple of crocodile clips and you had a very heavy, smelly, dangerous but effective lamping unit. You could always tell the lampers back then because all our shooting clothes and rucksacks had holes in them from battery-acid burns. Although the rig was immensely heavy and all rather 'Heath Robinson', it definitely worked, but was always prone to leaving you suddenly in the dark at the worst possible time when a bulb blew.

These days there is a wealth of lamps available in all sizes and all prices to suit all pockets and they are all much more portable and user friendly than the old ones we used to make. They come in various coloured beams and are scope mounted, weighing mere ounces, making it possible to lamp alone, which was always difficult back in the day when you needed a lamping buddy to lug heavy batteries around the fields. The upshot of all this is that lamping, once the preserve of those weird hill-billy country types with their homemade gear, is now available to anyone who has the inclination to try his hand at getting on terms with his quarry at night. This is a good thing because it has opened up a whole new sport, previously



This was my first digital unit and I loved it.

and even as I write the use of thermal imaging night sights are beginning to make an appearance on the gunshop shelves!

DIY

Back in the day, for shooting rabbits we needed a lamp, but there was no such thing as purpose-built lamps available off



Lamping is an effective means of vermin control, but more importantly it's brilliant fun. Even my daughter still enjoys going out occasionally.

untried and unheard of for many shooters, but it has also brought many questions and much debate on how to go about this nocturnal sport. This is where it can get difficult for the beginner to get good, solid advice because he will soon realise that even people who

This allows me to move around the area virtually unseen, and to get to vermin that would otherwise be unapproachable. For NV you need to learn different approach and movement tactics. The name of the game is stealth, and success comes with being able to

'Stalking and range judging on night vision takes time and practice'

have never been lamping in their lives before seem to dish out very bad advice freely on how it should be done.

TACTICS

When it comes to which tactic and technique to use on any given night it all really comes down to what you are trying to achieve. For instance, these days I mostly use NV for my night-time vermin control when I am shooting alone.

move around your permission without the use of any light source at all, and drop vermin before they even know you are there. After all, what would be the point in spending all that money on NV, only to advertise exactly where you are to all and sundry by turning your torch on every time you need to negotiate a fence or gate?

In fact, I don't even use the IR (infra-red) illuminator unless absolutely necessary. Stalking and ↗

range-judging on night vision takes time and practice, but once mastered it means the animals are completely unaware of your presence. It's a fantastic opportunity to observe wildlife in its natural state and surroundings when it is completely unaware of human presence, and that means it's a great way to learn about your quarry and its habits. The use of NV is not dependent on the weather. Yes, it's always better to have a bit of darkness and wind to cover your approach, but even on moonlit nights, NV works just fine and good bags can be made, with a little practice and experience. NV is however a solitary pursuit because the only one who can see

'If in doubt it is better to stay at home because it is very easy to make your quarry 'lamp shy''

anything in the darkness is the person looking through the scope. For that reason, if you are someone who likes company at night, then perhaps NV is not for you, unless you can persuade your friend to buy one as well!

DNV night shooting took on a whole new meaning; light, portable, superb detection quality and excellent value for money!



These days I prefer lighter, self-contained units, with plenty of reach and no dangling wires.

LAMPING

Lamping is without doubt the most likely type of night shooting most people will try, due to the sheer cost of purchasing NV

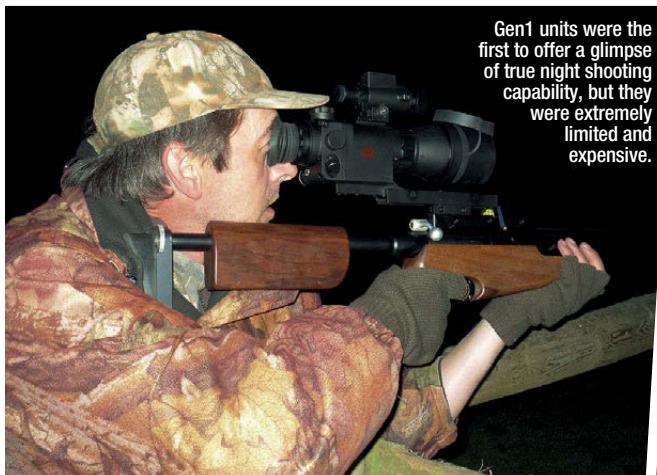
the area will know exactly where you are the minute you switch the lamp on, and although they may still sit for the shot, quarry will no longer be behaving in a natural and usual manner.

None of this matters when lamping because the aim of the game is merely to shoot whichever rabbits are available in that field and move on to the next, but lamping, unlike NV, is very dependent on weather conditions for success. Dark and windy nights are without doubt the best for lamping and moonlight is to be avoided at all costs. If in doubt, it is better to stay at home because it is very easy to make your quarry 'lamp shy' by going out when the weather is not suitable, or by going across the same land too often, and you will merely ruin your sport for the future. That's why I save lamping for when I have a guest with me and use NV all other times, because I can then be sure that when I want to

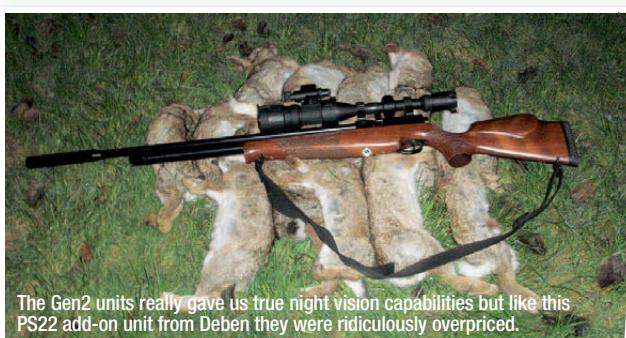
find some rabbits they will sit for the lamp. I always have plenty because their exposure to the lamp is kept to a minimum so they never become shy. Lamping is, however, far more sociable than NV because everyone present can actually see all the action and what's going on (very useful to have another pair of eyes to mark a rabbit dropped when picking up).

Lamps can either be scope-mounted or hand-held, with the latter only really useful on those lucky occasions when you have someone to lamp and carry for you. Hand-held units also tend to have larger batteries that have to be carted around, but you will find a lamp to suit every shooter and every pocket.

Lamping is not only a very effective way of controlling vermin, but it's also great fun and I urge all of you to try if you ever get the chance, but for now, have a good one and shoot safely! ■



Gen1 units were the first to offer a glimpse of true night shooting capability, but they were extremely limited and expensive.



The Gen2 units really gave us true night vision capabilities but like this PS22 add-on unit from Deben they were ridiculously overpriced.

.177 Pellet Power

Dan Wesson, 6" Silver Pellet Airgun



Specifications

- Length: 298mm/12,0inch
- Barrel length: 136mm/5,5inchMag.
- Capacity: 6 rounds
- Standard Mag.: 17833
- Velocity: 130ms/426fps
- Weight: 1014gr/2,3lb
- Energy: 3 Joule

NEW



Dan Wesson
DAN WESSON FIREARMS®

Dan Wesson, 8" black Pellet Airgun



Specifications

- Length: 338mm/13,6inch
- Barrel length: 181,5mm/7,3inchMag.
- Capacity: 6 rounds
- Standard Mag: 17833
- Velocity: 130ms/426fps
- Weight: 1040gr/2,3lb
- Energy: 3 Joule

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SMK XS501



501-DER!

Phill Price tries an all-new rifle from Co2 specialists SMK

SMK has been supplying Co2 rifles to the UK market for decades and these simple and affordable guns have something of a cult following. Being light and handy they've often become the tool of choice for close-range vermin control, such as rat shooting in and around buildings. Many of the various models have had a common action so it's interesting to see SMK introduce a completely new model. The XS501 looks to be styled on the Ruger 1022, which is massively popular in the USA.

The action has a solid, chunky appeal with the bolt handle being machined from steel, meaning

that there's no appreciable flex as you work it. Loading pellets is greatly helped by the wide channel that's relieved front and

developed. It went from 582 fps at the high end, to 553 over 50 shots, and in the real world of plinking and ratting, the effect that

appealing. The hardwood stock has no chequering, but it does have a contoured rubber butt pad helping it to stay in your shoulder

"Speaking of chronographs tests, how does 50 full-power shots from two 12 gramme capsules grab you?"

back, making plenty of space for fat fingers.

MORE POWER

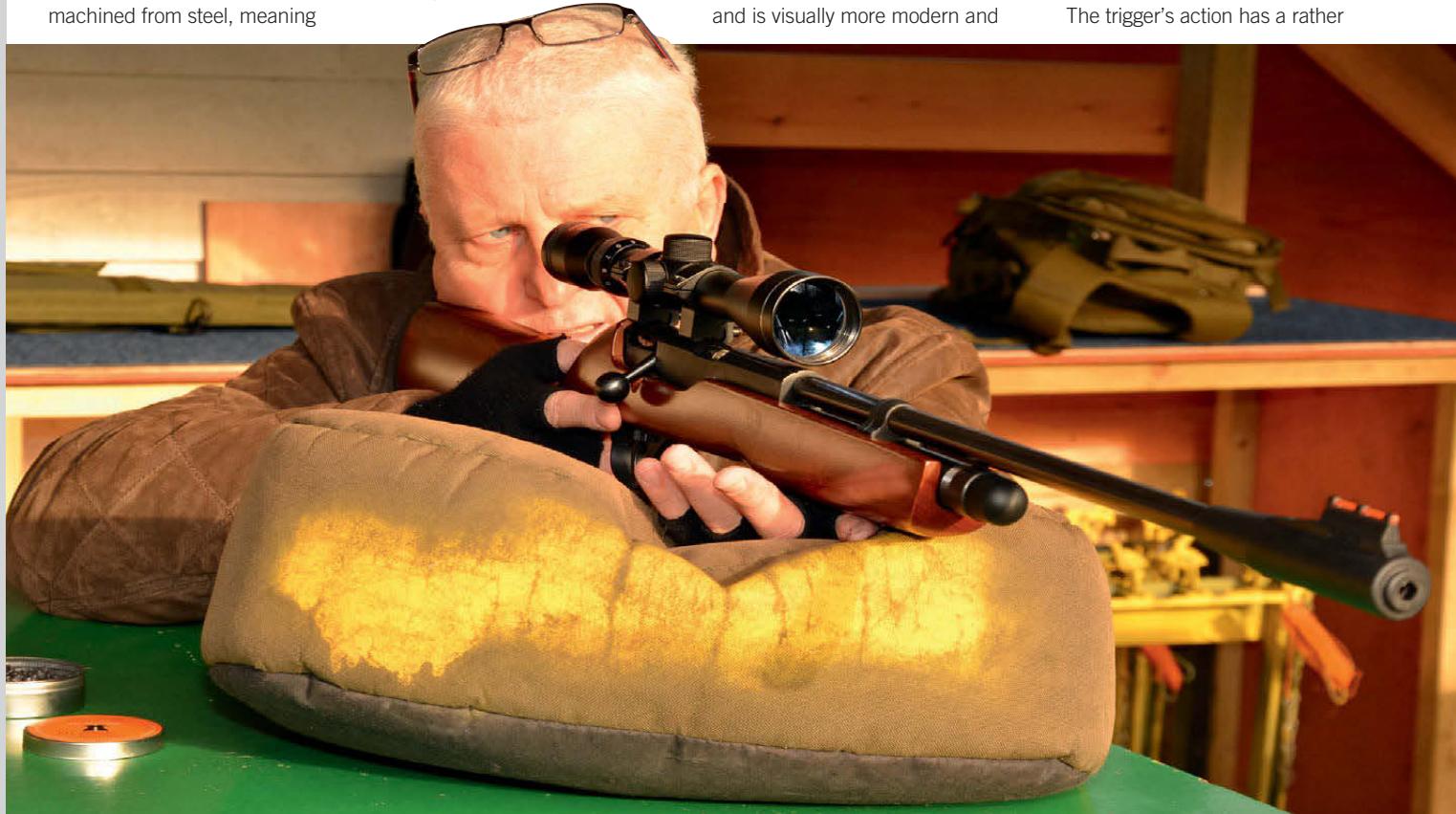
Speaking of chronographs tests, how does 50 full-power shots from two 12 gramme capsules grab you? It looks like they have the valving on this new model well

velocity spread will have on close-range trajectory is inconsequential. Producing close to 11 ft.lbs. on a 10°C day makes this a serious vermin control tool and one I'm sure will be an immediate success.

The XS501 has a much more substantial feel than older models and is visually more modern and

pocket. Because of the slim build and light weight, it feels like a small rifle, but the pull length is 14" which is a proper adult length. That being said, I'm sure many teenage youngsters could handle it comfortably and as with most modern rifles, the XS501 stock is ambidextrous.

The trigger's action has a rather



long second stage, but it's pleasantly light and reasonably predictable. The blade itself is made from folded steel which means that it's good and rigid.

AUTO SAFETY

On the right side of the trigger

guard is an automatic safety that slides back and forward. It can be reached with your trigger finger while in the shooting hold, which is ideal. It's also manually resettable if needed.

The test gun came fitted with a SMK branded 3x9 – 40 scope that has a 30/30

duplex reticle and nice bright optics. In fact, I was really impressed with the scope's performance. This combination could be taken straight out into the field with no need for changes or upgrades.

Open sights are fitted as standard which contain fibre-optic inserts to improve

their performance in low light conditions. However, with a scope this good costing so little I imagine that most users will make the upgrade.

DOUBLE UP

Power is provided by two 12 gramme Co2 capsules that fit into the tubular reservoir beneath the barrel. The first capsule goes in

neck first with the second the opposite way, so they're back-to-back inside. With the cap screwed fully down the capsules are pierced, releasing the gas into the reservoir making the rifle live. From there you just cock the bolt and drop in a pellet and you're ready to fire.

A new and very welcome innovation the XS501 brings is a bleed mechanism in the end cap. This allows the last of the pressurised Co2 to be evacuated completely before you unscrew the cap and remove the spent capsules. This is far quicker and more convenient than blank firing the gun until it's empty.

To see if the accuracy lived up to the promise of the rest of the rifle I went to the range with a tin of SMK's Black BS55 Domed pellets. SMK had kindly zeroed it for me so I shot some groups which were impressive; $\frac{1}{2}$ " at 20 yards with the very first pellet I tried is proper hunting accuracy. Then I started plinking the spinners to see just how far down range I could consistently hit them, which was great fun.

My club mates were keen to try the new rifle and, to a man, they loved it. In fact, one of them wanted to know where he could buy one that day. This is a great little rifle and something of a step forward for the type. I can see this joining the other SMK Co2 guns as a cult rifle that gets developed and customised by enthusiasts who love to make each gun their own. For the rest of us, it's a great value short-to-medium range gun just begging to be enjoyed. ■

"I was really impressed with the scope's performance"

SPECIFICATIONS

Manufacturer	SMK
Web	www.sportsmk.co.uk
Tel	01206 795333
Model	XS501
Type	Co2
Action	Single-shot bolt-action
Safety	Automatic
Trigger	Two-stage adjustable
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- Front sight carrier with Truglo fibre-optic sight
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ELITE FORCE EF104

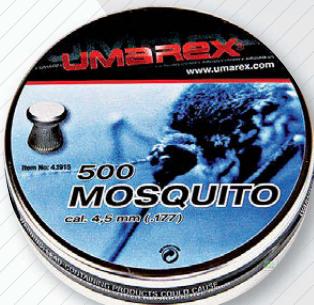
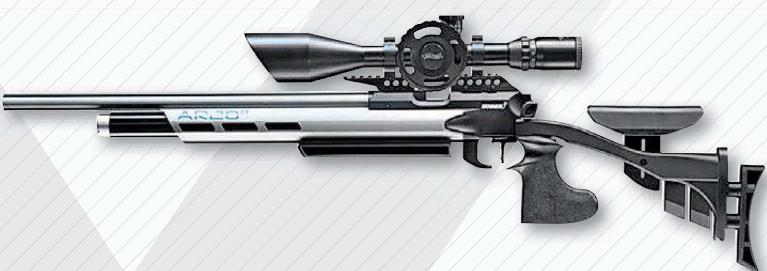
With its black coated spear point blade made of 420 stainless steel and partial serration, the Elite Force EF 104 has an unmistakable appearance.

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WEBLEY MK VI

James Thornber is blown away by Webley's new revolver

Once in a while I'm able to get my hands on something fairly special, and this weekend was certainly one of those times. While down at Ian Hodge Fieldsports in Wadebridge, I was lucky enough to bump into Stu from Highland Outdoors who showed me the new Webley MK VI Service Revolver, which at the time was the only one in the UK.

I've been following the development of this revolver because for a while the market seems to have stood still, but this Webley really was a breath of fresh air. I had heard some good things about it, but I tried to keep an open mind and reserve any judgement. Picking it up for the first time, I have to say I was immediately hit by the build quality.

Rather than adapting an existing platform to create the MK VI, Webley have used the original revolver's blueprints. What this means is, you have a replica that looks and feels like the real thing. An interesting feature was the new valve system; unlike other revolvers, Webley have produced their own valve which fits within the original blueprints, keeping things exactly as they should look. This just highlights the attention to detail that they have gone into. Serious collectors will be pleased to know that because it's a licensed replica it also features accurate original 1915 markings. You still have the usual markings on the right side such as the little 'F' for the German market and the '4.5mm' markings.

NOT JUST A LOOKER
Thankfully, the MK VI doesn't just rely on its looks; it functions much like the real thing too. Pulling back the small latch just in front of the

other replicas out there that look the part, feel the part with realistic loading, was that the trigger would let it down, but how wrong I was. Much like the original, the Webley

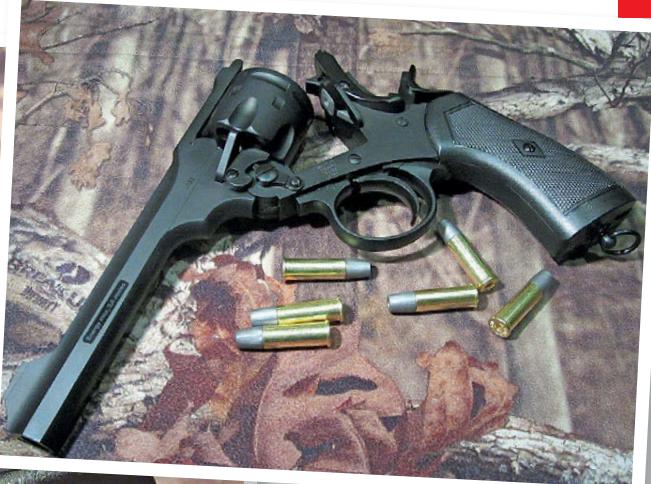
"This just highlights the attention to detail that they have gone into"

hammer opens up the revolver to show six well-finished shells. Again, thanks to the use of the blueprints, they load and eject in exactly the same way as the original. The shells are much the same as the Dan Wesson ones, but as with the Python they're a slightly different shape and size, so I'm not sure if you'll be able to swap them.

As for the trigger, it really is outstanding. My concern, as with

features a double- and single-action trigger and for double-action, it's much what you would expect from any revolver.

As you pull the trigger back it indexes the cylinder at the same time as moving the hammer to the rear. Whilst heavy, it wasn't as bad as other revolvers I have used and I was able to keep it nice and steady with little movement to the barrel. However, single action is really where this revolver comes



The level of realism is fantastic.

"Overall, I have to say I was seriously impressed with the Webley MK VI Service Revolver"

into its own; for many manufacturers this is where revolvers often get let down. Pulling the hammer back, I was really impressed by the incredibly

smooth, mechanical feel of the action. The hammer just wanted to glide back and lock into position with a really nice, positive click.

Once there, firing off the shot

was a breeze. This really has to be one of the best single-action triggers I've used in a long while. Breaking the shot was effortless and incredibly smooth. I did notice

that if you held the gun correctly and firmly there was virtually no movement in the six-inch barrel at all, which was impressive. I'm not sure if they used the blueprints to create the trigger group, but whatever they did I applaud them, because the result is a class-leading trigger, for sure, and one that I hope others will learn from.

WELL IMPRESSED

Overall, I have to say I was seriously impressed with the Webley MK VI Service Revolver. Whilst the one I was able to use was the only one in the UK and a 'hot off the press' revolver, the finish was still really good and everything about it was just screaming out high quality.

Unfortunately, I didn't have the chance to field-strip the revolver, and with the full metal construction, realistic trigger group and the incredibly realistic shell loading, it's very easy to forget you're loading an airgun. It's only when you pull the trigger and just get a 'pop' that you remember, something other guns can only dream of achieving.

I've learned that the MKIV has already turned into a best-seller since its launch last November and all I can say is, I'm sure you won't be disappointed. I know I wasn't.

The Webley MK VI revolver is a much-needed breath of fresh air in the industry, setting a new standard for everyone else to try and match. Again, a massive thank you to Stu from Highland Outdoors for letting me have an in-depth look at this revolver. ■





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Sale of the 20th CENTURY

John Milewski is in collector's heaven as he's asked to look over a huge range of classic airguns

When the editor asked me to accompany him and value an airgun collection, I was intrigued enough to take a break from writing up the Webley Mk 2 Target Pistol this month and didn't need asking twice. Sadly, the owner had recently passed away and his widow was considering her options regarding disposal of around 50 vintage and classic air rifles. It is not often an entire collection comes on to the market, but when this does happen, it provides a rare opportunity for collectors to acquire some uncommon items.

The air rifles spanned the whole of the twentieth century, with examples from every decade, and it struck me how similar the overall theme was to my own

that 'tuned' feel about them. These were rifles collected and then restored to look their best, and shoot well too.

TURN OF THE CENTURY

Starting at the turn of the twentieth century, there was a little Gem with a nice tight breech. Cocking the mechanism suggested that this airgun would make a lovely plinker at short range. A slightly later Jean Marck No 3 could be described as a 'Gem Type', but upon closer examination, the build was more substantial. This No 3 came in 6.5 mm calibre, which is slightly bigger than .25. Modern .25 pellets such as Marksman will fit but require slight skirt expansion for a

"The air rifles spanned the whole of the twentieth century, with examples from every decade"

collection. It would have been unfair of me to cherry-pick from the items before they were sold, so I'd have to wait along with everyone else if I wanted that BSA Improved Model B Light Pattern. Most of the rifles had been refinished to a very high standard by a professional gun restorer based in Spain, and all the examples I cocked had

tighter fit. My own example has a Lanes Patent Bullet Expander in the stock for such a purpose, but it is not difficult to make up such an implement. The No 3 was also fitted with a Swiss-style target rearsight and a foresight that offered a choice between a golden bead or a shrouded globe. I would love to have

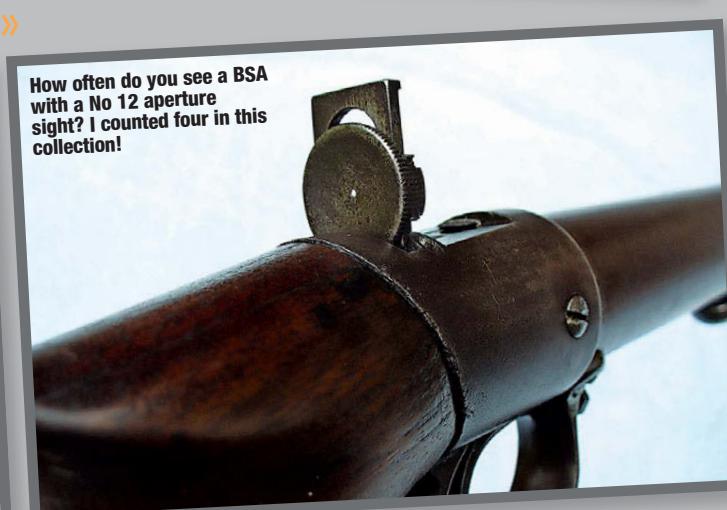
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So many guns! I identified rifles from each decade of the twentieth century.



This BSA straight hand stock had some beautiful extended shotgun-style chequering.



How often do you see a BSA with a No 12 aperture sight? I counted four in this collection!

tested this example because it was just itching to be shot.

I then examined an early Millita and a very early Lincoln underlever with a serial number in the hundreds, dating it to 1905. There were plenty of BSA air rifles in the collection and it was pleasing to see four Improved Model D rifles from around 1909 that were factory fitted with BSA No 12 aperture sights. These trigger-block mounted sights are rarely encountered and I saw more examples in one place there than I had ever done previously in my collecting life. I noted two BSA rifles from 1914 and I wondered what had happened to their original owners a little over a century ago.

TWO OR THREE

A BSA Standard No 1 from 1922 caught my eye due to its two-hole trigger block. These triggers were non-adjustable and replaced by a three-hole block later that year. Refinishing meant the cylinder etching was long gone, but the rifle was complete with its sights and had a tight action. It looked like it would shoot very well as by now, I could see rifles had not only been refinished but internals were also polished and catches all worked with satisfying solidity, if there is a such a term.

The 1930s were well represented by at least four examples of the Webley Service air rifle. Two of these were in the rarely seen .25 calibre and had matching actions and barrels. One of the .25s was cased with accessories and came with a spare .177 barrel.

POST-WAR

Post World War 2, the 1940s, 50s and 60s are fondly remembered



This BSA Improved Model B had an exhibition-grade walnut stock.



There were two Britannias in the collection. This one was marked as an Anglo Sure Shot.



This Jean Marck No 3 had a solid lock-up and was itching to be shot.



On a 6.5 mm, you'll obtain better accuracy by expanding pellets on a tool like this original Lanes Bullet Expander.



What about a cased .25 Service with matching barrel and action along with a spare .177 barrel?

"If you are looking for a classic to add to your collection, keep an eye on the major auction websites or the news pages in Airgun World "

by airgunners today as decades when the BSA Airsporter was pitted against the Webley Mark 3 in the popularity stakes. Several examples of each model were in this collection including a Mark 3 with fluted stock and optional Parker Hale 16M aperture sight. Not all rifles had been refinished, and I examined a nice BSA Cadet with intact etching.

The 1970s witnessed a resurgence in airguns, particularly after *Airgun World* was launched in 1977 and customising air rifles started to become popular towards the end of the decade. Norman May and Co sold their classic Vixen at this time and there was a splendid example in this collection. A Weihrauch 80 from the 1980s represented that decade and with

its scope in place, it looked to have given good service as a working gun during its life.

There were a couple of late BSAs from the 1990s including a fine Stutzen in .22, which has earned a reputation as a serious classic due to its stubby looks and handy balance. BSA based the design on one of their centre-fire rifles and well-maintained examples such as the one I examined can fetch around £300 today.

Final arrangements around how the collection will be sold have not yet been made, but the likelihood is that they will go to auction. If you are looking for a classic to add to your collection, keep an eye on the major auction websites or the news pages in *Airgun World* and you may just find something quite special. ■



Britannia air rifles were renowned for their fragile rearsights. This replacement is far more solid than the original.



The Swiss-style match sights were fitted as standard to the Jean Marck No 3, making this a desirable Gem type.



The Swiss match sight was accompanied by this reversible unit up front.

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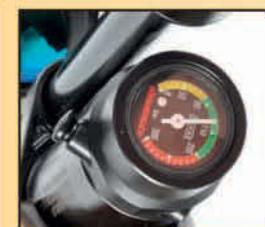
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Model	Calibre	Barrel length	Weight
HW100KT QF	.177 / .22	310mm	3.4kg
HW100T QF	.177 / .22	410mm	3.8kg
HW100KS QF	.177 / .22	310mm	3.4kg
HW100S QF	.177 / .22	410mm	3.8kg



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Cal:
.177 - 8.2g
.22 - 14.5g



SUPER-H-POINT

Cal:
.177 - 6.9g
.22 - 14.2g
.25 - 25g



SUPERFIELD

Cal:
.177 - 8.3g
.22 - 15.9g



SUPERDOME

Cal:
.177 - 8.3g
.22 - 14.5g
.25 - 31g



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FOLLOW-UP TEST



MAKING LIGHT WORK

The editor reports back on the Brocock G6 – with some heavy advice on shooting ultra-light rifles

It's funny how things work out, but I'll get to that bit later. Meanwhile, last month, in response to a detailed enquiry from a reader, I tested the latest incarnation of the Brocock Contour S6, production examples of which will be tagged 'G6' due to its decidedly green persuasion. Our reader, Mason Roberts, wanted an ultra-light, pre-charged pneumatic multishot, with an ambidextrous stock, a precise, two-stage trigger, and the potential to take rabbits out to 35 yards. This rifle also had to be simple to operate and 'realistically priced', and the newest version of the Brocock Contour that was sitting on my desk really did seem to be the answer.

FIRST TESTS FINE

After my initial bench tests, I'd pretty much filled Mason's wish list, but the final verdict could only come after I'd spent some time in the field with the G6, doing the sort of stuff Mason intended to do with it. From these expeditions, I

would work out how best to get optimum performance from the rifle, and what, if anything, a potential buyer should look out for, or change. Here's where the 'funny how things turn out' bit comes in.

Days after completing my first test of this Brocock, and for

knee which had clearly sustained some collateral damage, and at least two of my ribs seemed to be plugged into the mains. As someone who has broken both arms in separate fishing accidents, I took my present damage report as a win. It turned out that severely tweaked ligaments were

"This rifle also had to be simple to operate and 'realistically priced'"

reasons still unknown, I alighted gracefully from our stairs a full three steps from the bottom. I'm not quite the lump I used to be, but I still hit the floor with an impressive 'whump!', via a painful torso-bounce off my own knee. I achieved all this in complete darkness, at 4am, and consequently spent about 30 minutes lying on my back at the bottom of the stairs, gingerly stretching appendages to see what I'd broken.

All legs, arms and necks were as issued, apart from my right

the cause of my knee pain, and that I'd re-broken the two ribs I'd originally busted in that road accident in Belgium last year.

INTO THE FIELD

The result of this was, I wouldn't be able to aim, or carry, anything but an ultra-light rifle for several weeks, so it was incredibly fortunate that I had the sub-six-pound G6 to test, really. I also had the new BSA Gold Star SE to review, but this could take place mainly off the bench until my bits settled down, so I grabbed the Brocock and hobbled »



It's at home in the hunting field



off into the field.

It was during this phase of my test that the swings-and-roundabouts world of the ultra-light, ultra-handy sporter imposed itself on mine. First, of course carrying such a light outfit is the purest of pleasures when you're tramping the fields from hotspot to hotspot, as most of us do. Similarly, upon reaching a barn or machinery-cluttered outbuilding, the Brocock's 31-inch length is perfect for steering around obstacles when rats and feral pigeon are the objects of the hunt. It's when this neat little tool is used in a 'deliberate' – odd term, but valid I'm assured – way, that the hunter needs to look closely at his technique.

WEIGHT FOR IT

Extremely light guns are far harder to hold on target – fact. That's why top target shooters generally go for

sacrifice even to consider adding weight to an ultra-light rifle, but that extra pound could increase on-aim stability to a worthwhile degree. Personally, given my preferred state of rib-fitness, I'd add at least a pound to a G6, by having its grip bored out from the inside, and filling the cavity with lead. Further ballast

and balance of your outfit, it's time to turn your attention to your technique, which needs to be as tension-free as possible. My

magic bullet that is follow-through.

"the 31-inch length is perfect for steering around obstacles"

could be invisibly added to the fore end in the same way, with each modification properly sealed to keep out the elements, of course.

TECHNIQUE TIME

Once you're happy with the weight

extensive sessions with the G6 showed that when tension builds, the overall smoothness of my shooting dropped in direct relation to it. I was less relaxed than normal, due to the dodgy ribs, but this forced me consciously to calm down during the aiming and shot-release phases.

A 'thumb-up' trigger hand helped this considerably, as did the gentlest of holds, exactly as you would with a springer. Also, don't let the fact that the Brocock's light weight allows you to hold aim for longer than you normally would; stick to the rhythm and timing that works best for you, no matter what the weight of the rifle. Basically, shoot like you always do, but pay particular attention to relaxing, trigger technique, and the

AFTER-TRIGGER ESSENTIAL

Correct follow-through is essential at any time, but the negative effect of not doing it is far more severe with a light rifle. Establishing proper follow-through means you maintain perfect aim until the pellet strikes. Failing to do so risks moving the rifle off aim as, or even before, the trigger is squeezed, usually by moving your head away from the scope to see the result of the shot. As stated, it's far easier to 'twitch' an ultra-light rifle than a hefty one, hence the special attention required to micro-manage the Brocock G6 during those deliberate shots.

The good news is, shooting a rifle like the G6 to its best advantage provides a fantastic training medium for any other rifles you may have. After all, while heavier guns allow us to get away with a few minor sins, it's still best not to commit those sins in the first place. In fact, just like a springer provides the perfect test of your PCP technique, I'm saying the same for an ultra-light rifle. Yet another new trick this old dog has well and truly learned.



You need to think about those 'deliberate' shots ...

rifles that are as heavy as the rules allow. Light rifles can be 'twitched' off target with disconcerting ease, and it doesn't require much of a twitch to turn a perfect strike into a miss, or worse, a wounding shot. Fortunately, the fix is simple and basic, but it does need to be applied.

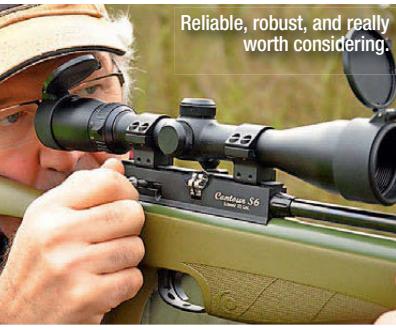
First, decide if you really need your rifle to be as light as it is. Yes, I know it seems like



... and consciously reduce your tension and tendency to twitch.

CONCLUSIONS

As far as Mason is concerned, the Brocock G6 works out as the rifle to fulfil his many and varied needs, of that I have no doubt. I'd still recommend a butt pad transplant and the use of an adjustable version, plus the purchase of the optional silencer of course. The waterproof coating does its job superbly, and apart from the standard soakings I get at this time of year, I stood the test



Reliable, robust, and really worth considering.

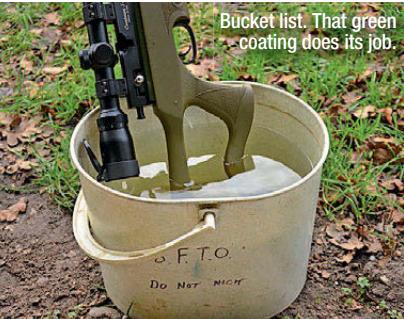
TECH SPEC

Model: Contour G6
Manufacturer: Brocock
Country of origin: UK/Italy
Price: £549 (includes two, six-shot magazines)
Type: Pre-charged, multi-shot hunting rifle
Calibre: .177, .22
Cocking: Bolt-action
Loading: Via removable rotary, 6-shot magazine
Trigger: 2-stage, adjustable unit
Stock type: Ambidextrous, rubberised, skeleton sporter
Weight: 2 kg (4.6lbs) unscoped
Length: 788mm (31ins)
Barrel: 432mm (17 ins)
Fill pressure: 200 bar
Shots per charge: 35-plus in .22, 30-plus in .177
Average energy: 11.2 ft.lbs.
Best group at 25 yards: 15 mm diameter
Favoured pellet of test rifle: Air Arms Diabolo Field
Options: FAC-rated actions
Contact: Brocock 0844 800 9905

RRP £549



As ever, a silencer is an essential.



Bucket list. That green coating does its job.

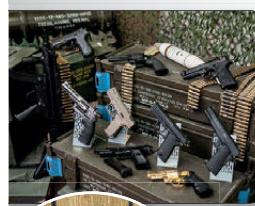
rifle in a bucket of water for several hours and nothing seemed to get past the green, rubberised coating.

Accuracy remained at the first test level, as did consistency and shot-count, although I felt that the action had become noticeably sweeter. Provided Mason's understanding of this incredibly handy little sporter is right up there with its performance potential, I'd have no hesitation in recommending it to him – or anyone else come to that. ■



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EVERYDAY HUNTER

Nigel Jones's plans come together underneath his woodland feeder

The month of March brings a little excitement back into our hunting trips, with the buds and shrubs starting to sprout. We now know spring is knocking on our door. Some of our quarry species have already added young, fresh out of the warrens with certainly more to follow. Avian quarry species will start pairing up this month and construct their nests to breed; crows and rooks are the busiest first, gathering in numbers at their yearly rookery sites, repairing what the harsh winter has done to last year's nests or building new ones. Also, last years young will have their first breeding cycle, so may bring me some productive 'brancher' shooting. The term 'brancher shooting' means shooting the young rooks that come out of their nests but cannot fly due to their wing feathers having not finished growing yet. It's the best way of keeping control of rooks and crows as they're crafty kings in the stealth department, as I know, and no doubt some of you do too.

However, with a bit of planning and good hide net location underneath them, you can certainly bag a few of the mature ones before they pair up, and lay their eggs. I tend to leave them after they lay and wait until about 11th of May, when you will see the young hop out of their nests, still unable to fly. It's here that serious pest control takes place with the air rifle. Also, I tend to carry on taking young and old rooks after this date, to make a good dent in their population for the landowner, but make sure you stay under your hide

net for the mature rooks, because they will only cartwheel above the nests, squawking, with alarm.

MOVING ON

I just wanted to cover a bit about my rook-shooting tactics for you all, before the month of May because we are a month behind, for publishing purposes, but now let's move on to this month's article. I hope you find this helpful and informative as I reveal to you my world of pest control with the air rifle.

This month I had another grey squirrel pest control job to attend to, which was an excellent opportunity to get out and do some shooting with my Air Arms Ultimate sporter, before I laid my baiting stations to finish up the job. The job

was in quite a large woodland that does, in fact, have a small rookery on the end of it. I have already had talks with the estate owner to return for some brancher shooting in May. It was a very cold Tuesday when I visited the woodland to put up my well-constructed, rather large feeder that could hold a few bags of bait. After I placed it, I filled it with peanuts and black sunflower seeds, because these two varieties have brought me a lot of success down the years against the grey squirrel. After that was done, I scrubbed the woodland floor underneath the feeder with my boot, to take off the dead bramble and leaves. This particular tactic reveals a scent to the squirrels and tempts them in to investigate the feeder. Then I sprinkled some

nuts and seeds on the revealed, moist soil as well. With all that done it was time to head off and leave things to settle for a few days.

On my return to the feeder on the Friday, three days later, I was truly amazed at the results. The feeder was half empty and somewhat chewed as well, proving that the first phase of the job had gone to plan. Next, I'd return with my air rifle and hoped to take out some of the little blighters. I planned to go on the following Tuesday morning, and to get into position before daylight arose, to shoot some very hungry squirrels. When Tuesday arrived, I stumbled out of bed at about 6.15am and jumped into my 4x4, heading off to the woodland with quite a good feeling about my day ahead.



Pitching down prone at about 23 yards away from the feeder, just under a fallen large tree trunk, gave me just enough cover to target the squirrels on the large feeder.

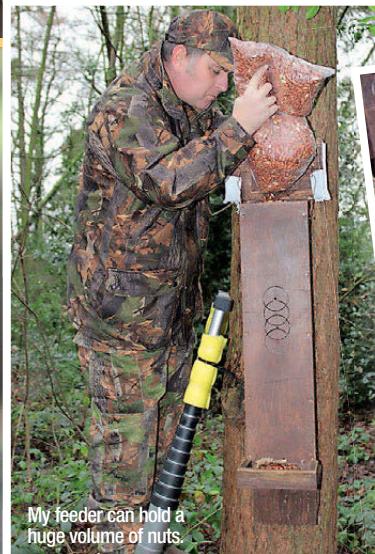
ENGLISH OAK

My camouflage choice for the day was Jack Pyke English Oak because it's ideal for autumn and winter shooting. I put on my head-net and gloves for full concealment, just in case there was a chance of a shot at avian quarry landing above me whilst I was targeting the greys. Lying down wasn't that bad because I scrubbed off the dead bramble and leaves, so that if I moved, no rustle would alert my incoming quarry. However, being a seasoned hunter, not much bothers me when I'm out in even the harshest of weather conditions, but lately the weather has been so unpredictable. Last week, we had minus five and this week it's 13 degrees above. How crazy is that for the winter time! I just keep getting on with it whatever the weather wants to throw at me.

I remember last year about September time, our Rosie Barham was panicking for rabbits and squirrels for her cooking demonstration and book release at a game fair. Five days before that, I was out in the worst weather you could possibly imagine. Heavy, torrential rain and winds, but I used the conditions to my advantage, and it was some of the easiest lamping I've ever done. That night, I managed to get Rosie 18 rabbits, all taken with extreme care and accuracy, but some rabbits were so easy because of the sound of the wind and rain, I could stalk up to around 12 yards. Rosie was very happy and I was proud that I could be of service.

FLAT OUT

So lying down on the floor didn't bother me at all, plus with Jack Pyke clothing on I felt rather cosy and comfortable. As daylight was breaking, I could



"On my return to the feeder on the Friday, three days later, I was truly amazed at the results"



hear the wood starting to come alive, with crows starting to call first, then woodpigeon about 20 minutes later as the sky went from black to dark blue. I knew that in the next half an hour the first squirrel movements should take place, but that wasn't to be the case; as usual our quarry never reads the script. The first chance of the morning was a

woodpigeon that landed right above me, so I slowly got up to my knees, and using the fallen tree as a stable rest I began to take aim on its head. With a slight hold-under to compensate for the upwards angle, I carefully released my Air Arms Field .177 pellet on its way up to its mark. After a nice, loud crack the woodpigeon crashed

to the floor stone-dead with a thud. 'That's one in the bag; I'll have that for tomorrow's tea for sure,' I thought. I'm quite partial to a nice bit of woodie breast, it's my favourite edible quarry. I waited for a further 15 minutes when a nice plump grey squirrel started heading toward me and possibly the feeder. My luck was in here, for sure. It arrived at the

“...lying down on the floor didn’t bother me at all, plus with Jack Pyke clothing on I felt rather cosy”



a smack that one was; so loud that I thought this could have been my last of the morning with the connection of that shot.

A GOOD DAY

With three in the bag I was starting to feel very happy at how my set-up was going, but a little concerned that I might not see any more for while after that last shot. It was a loud crack; squirrels are tough little critters, that's just one of the reasons why my preferred calibre is .177. Not only does it fly straight, but hits hard with good penetration.

A good 30 minutes passed before my fourth chance arrived above me. It was another woodie, so up I came, very slowly, from my prone position to lean on the fallen tree trunk again and take aim. I dropped this one with ease, making it another addition to my game bag, and eventually my larder.

HAPPY WITH THAT!

The morning was in full flow, at about 10.30am the world had awakened, as I added another two squirrels to my tally, making it a bag of six for the session and I was well chuffed with yet another fine shooting performance by me and my Air Arms Ultimate Sporter, Bushnell Legend combination. However, tomorrow is another day and

I have more woodland and feeders to target the grey squirrels. I often battle the greys because I'm quite proud of doing my bit for our cute, British-born, furry red friends. Until next month, be safe and keep getting out there, no matter what Mother Nature throws your way. ■

top of the tree the feeder was attached to, and made headway down the trunk toward its free meal. It arrived very quickly for breakfast, grabbing its first peanut and starting to nibble away. After about three bites its days were numbered as I pressed through my Ultimate Sporter's excellent two-stage trigger. It went crashing to the

floor to confirm squirrel number one was in the bag. It wasn't long after when another squirrel appeared on the feeder. This one came from nowhere; it must have arrived on the floor and up toward the feeder. I aimed the crosshair of the Bushnell Legend on its bonce and released another little lead payload towards its mark. What



A nice bag and a good reward for my hard work.



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GENTLEMEN, WE SALUTE YOU



Our sport is the poorer this month as the editor pays tribute to two of its greats

John Ford, the founder of SportsMatch, and Professor Mike Wright passed away, recently, and I'd like the readers of this magazine to appreciate at least some of their talent and their worth to our sport. It always seems inadequate to describe the life's work of a genius in relatively few words, therefore doing so for two of them will be impossible, especially when their achievements are so significant. I also have to consider that both men, whilst of widely differing character, were decidedly against self-glorification, which explains why there's only one photo of Professor Mike.

Over the years of Mike's work for our magazines, I tried

repeatedly to have him include himself in his articles, but it wasn't his wish. 'No one wants to see me – they want useful information!' was the constant rebuff, and eventually I gave up trying. If I've learned anything over the years, it's that the shy genius is often an

Emeritus Professor Mike Wright. PhD, FREng, FIMechE, FRSA, CMath, FIMA, FIEE

'It is with great sadness that I report that Mike Wright passed away on 10th January, following a long battle against cancer. I first met Mike at a field target

dear friend and collaborator in my never-ending quest to discover how airguns really work.

DEVELOPING INTEREST
Mike developed an interest in airguns at the age of 12, left school with a less than impressive set of exam results, but started an apprenticeship with a company that manufactured electric motors, which allowed him to study at Aston University, where he was awarded a PhD in 1972. Following a series of senior positions in engineering companies, Mike took a position as professor and head of the Department of Mechanical and Electrical Engineering at Aston University, where he rose to become Vice Chancellor.

"No one wants to see me - they want useful information!"

extremely resolute one. So, instead of building this tribute around personal detail, I'll use my own thoughts and those of Jim Tyler to applaud the quality and contribution of these remarkable men. First, here is Jim's tribute to his friend and colleague.

shoot in early 1985, when he cheerfully informed me that something I'd published on energy and momentum was wrong, and I invited him to write an article to put it right. He did, and went on to become a regular, and highly regarded, contributor, as well as a

THE SPORTSMATCH SCIMITAR

ON TEST

BY GEOFFREY BOXALL

If you don't like the look of it, don't worry. You probably can't afford it anyway!

The Scimitar was a GC2 variation that still looks good 20 years on.

1 Withdraw the bolt.

2 Load a pellet.

3 Cock the action.

4 Release the cocking rod.

Continued over the page

AIR GUNNER 31

Throughout his engineering and academic career, Mike's love of airguns persisted; he was a regular on the developing field target circuit, a friend of the airgun 'greats' such as John Wiscombe and Dave Welham, undertook experimental work for the airgun trade, wrote ballistics software, and amassed an impressive collection of fine air rifles and pistols.

In 2010, Mike contacted me out of the blue and volunteered to write for Airgun Sport, and I jumped at the chance to work again with this great man.

INCREASED UNDERSTANDING

Mike's thorough knowledge of physics, combined with his brilliant abilities as a mathematician and his love of his subject, has greatly increased our understanding of how airguns work, and I feel privileged to have had the good fortune to have known, and worked with, a man of such genius.'

UNDERSTANDING GENIUS

Whilst Jim could converse with

Professor Mike on a level very close to Mike's own understanding of airgun dynamics, I simply could not. I tried, believe me, because no one wishes to appear an idiot in exalted company, but I just didn't have the technical nous to keep up with Mike, and he knew it. So, he dropped to my level,

"Professor Mike Wright was more than a genius..."

which must have been quite some nosedive for the great man, although being the gentleman he was, he did it without making it obvious and without talking down to me. I felt the need to apologise for dragging down such a fine mechanical mind, but Mike would have none of it. He even tried to balance our huge disparity by telling me he wished he could shoot and write as well as I did, when the truth was he could have done both, and far better than I ever could, had he wanted to. Professor Mike Wright was far more than a genius, more than a working class boy who rose to the very top of his field, and more

even than a fine family man, friend and colleague. Mike was an inspiration to all who knew him, and I have no doubt whatsoever that he has made a genuine difference to this world, within our sport and beyond. Professor Mike Wright was, and will remain, the modest man with a towering

intellect, and a man I felt truly honoured to know.

JOHN FORD

I knew the impressively-named John Brian Malpas Ford for almost 30 years, and we never had a cross word. He'd get a bit tetchy when I reeled off yards of cleaning tissue as I wiped down my GC2 field target rifle at his SportsMatch factory in Dunstable, but that was about it. He'd also call me some dreadful names at times when I broke that wonderful airgun, none of which are suitable for this family magazine, but all foul-mouthed was delivered with that trademark Ford grin and sparkly eye.

The business of SportsMatch then, as now, involved producing the highest grade scope mounts and accessories, but John was a visionary, as well as a genius. As early as the mid-1980s, when the top end of the airgun world was deliriously happy with our tuned springers, he saw the need for an outrageously expensive, regulated, pre-charged pneumatic rifle, developed in conjunction with the renowned airgun guru, Gerald Cardew, who also donated his initials. The GC2 – GC1 was a test platform – was the finest production sporting air rifle of its time, and while other companies eventually challenged it, John's vision put his rifle first among them.

GC2 TRIUMPHS

I was slow to come around to the pre-charged pneumatic concept, but John Ford won me over and as the '80s made way for the 1990s, I became an unbearably keen GC2 shooter. That rifle took me to the U.S. Field Target Championships in 1989, and the European title in '94, among other honours, while more talented

John Ford and his vision for the future.



shooters won just about everything available at the time. The GC2 was never designed to be a moneymaker, and it wasn't; it existed as a statement of one man's passion for excellence, and his inventor's need to turn vision into reality.

OTHER DIRECTIONS

John's inventive genius was by no means confined to the world of shooting. Among his many ventures into the world of creative mechanics, John Ford was the designer of road wheels for sports cars, a part of the camera system that took the first photographs of the DNA molecule, and an underwater bicycle. Yes, an underwater bicycle; a man-powered device so efficient

that, when ploughing up and down the swimming baths in Luton, John could make the bike 'porpoise' as it broke the surface. John was the finest company imaginable, and like Professor Mike, he was naturally inspirational. If you ever find yourself in the company of FX Airguns owner, Fredrik Axelsson, ask him who was his mentor back in the day. Fredrik freely acknowledges John Ford as his greatest creative influence, and like all who knew John, he was devastated at his passing.

GOODBYE MY FRIEND

John passed away in Spain, where he'd retired with his

beloved wife, Vera, and John's son, Matthew has carried on at the helm of SportsMatch, which is still

The wonderful man I'll always remember.



based in Leighton Buzzard and still makes what many regard as the best mounts in the business. It seems like a cliché to say we'll never see his like again, but it's true all the same. John Brian Malpas Ford, like all great characters, is irreplaceable, and I'd need several magazines to tell his full story, as he deserves it to be told. He wouldn't want me to do that, though, because, behind the bluff bonhomie, John Ford was another of our modest geniuses.

I was given the honour of being the best man at his marriage to Vera, and just before the time came to say a few words in formal acknowledgement, John took me to one side and said firmly, 'Let's not be doing with this 'speeches' nonsense, Tel-Boy. If you don't do one, I won't have to, see?' I saw, and kept the toasts to the bare minimum.

We'll be toasting John Ford's life and legacy once more in a commemorative service later this year, when John's friends will gather to remember the life and times of a wonderful man, who made our own lives that bit brighter. Goodbye, John; no one who knew you will ever forget you, mate, I promise you that. ■



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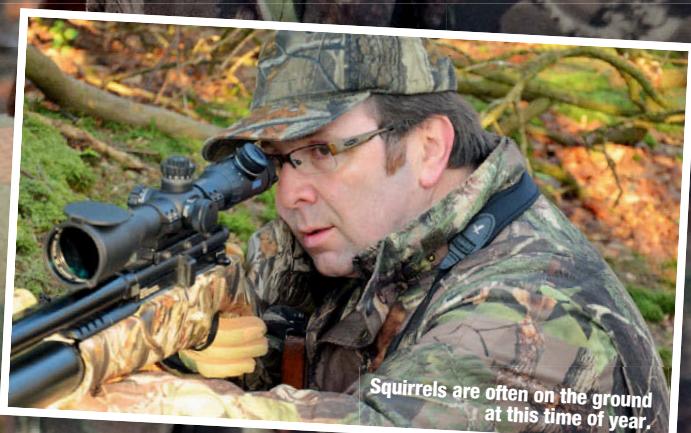
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BIG BORE CONCLUSION

Phill Price makes his decision on FAC calibre



Squirrels are often on the ground at this time of year

Over the last few months I've been lucky enough to have had a BSA R10 MK2 which is running at over 30 ft.lbs. in .25 calibre. My usual hunting rifle is a Daystate Mk4 iS in .22 which produces similar power and this gave me the perfect opportunity for a side-by-side comparison. Both guns are accurate and prefer Air Arms Field pellets with the .22 weighing 15.9 grains and the .25s tipping the scales at a meaty 25.4. This is the source of the biggest difference between the two. The .22 launches its pellets at 930fps while the .25 is nearer 730, a huge 200fps difference.

Speed of flight is the biggest factor in trajectory and is based on two factors. The first is muzzle

velocity and the second is ballistic coefficient. The latter is a number that represents how well the pellet

cuts through the air and retains its velocity. The higher the number the better. For reference the .22 is 0.031 and the .25 is 0.036 which isn't a big difference in the real world.

"Speed of flight is the biggest factor in trajectory and is based on two factors"

Alongside trajectory, the effect of the wind in blowing our pellet off course is the next biggest problem we have to deal with. Jim Tyler and Mike Wright devised a numerical representation of this effect with their Wind Susceptibility Factor which has shown itself to be accurate in field testing. In this case, the lower the number the

ACCURATE PLACEMENT

No matter how hard a pellet hits, accurate placement is still vital for

a clean kill, although it's true that these high-power rifles do have a greater margin for error. better. The .22's WSF is 128 while the .25 is 139. What does this mean in the real world? In a 5mph breeze the .25 will have blown 1.6" off course while the .22 will be 1.7" so there's really nothing to choose between them.

With all the maths clear in my head I took every opportunity to pursue my favourite shooting sport, which is squirrel shooting. I'm lucky enough to have access to forests which are plagued by them and the owners are very glad to have my help in getting the numbers down. I mostly hunt on my own, but relish the chance of one of the estate workers, Russ, coming out with me. We carried both guns and swapped repeatedly throughout the day.



"Having now shot a large number with both rifles I have to say that I cannot tell their terminal performance apart"

TOUGH BUGGERS

It has to be said that squirrels deservedly have a reputation for being very tough and hard to kill cleanly, so I felt they were the ultimate test for these hard-hitting guns. I know my .22 is terrifically effective on them and I wanted to know if the bigger calibre could better it. Whenever possible I always take head shots because this is immediately fatal, whether I'm using my .177 12 ft.lbs. gun or the high-power model. However, I'm not always presented with a clear view of the head and with a legal limit gun I leave the squirrel alone, but the FAC gun is fatal with a chest shot, offering more opportunities.

This being said, they don't always drop straight from the branch, taking a few seconds to bleed out. I wondered if the larger calibre hole would have a stronger effect on these amazingly tough animals.

AND THE DIFFERENCE?

Having now shot a large number with both rifles I have to say that I cannot tell their terminal performance apart. The noise of the impact is impressive from both and the damage to the heart and lungs huge, yet some seem

to need a second shot just to be sure, no matter which calibre had struck them.

This leads me to conclude that at this power level the .22 is still the king of the hill. The faster flight means that my pellet is never more than $\frac{1}{2}$ " above or below the sight line all the way to 49 yards, while the .25 is only 41. Eight yards might not sound a lot but rangefinding errors at long-range are very common so this is a clear advantage I'll be taking.

Daren Godfrey from Impact Airguns is a big fan of .25 and hunts with one regularly but he runs his nearer to 50 ft.lbs., which means his pellets are flying as fast as my .22s, so the trajectory is at least as good, if not better. They will also have that much more clout on arrival too. The downside of this is that 50 ft.lbs. guns eat up their air supply at a ferocious rate and need a huge buddy bottle to run from.

As for the R10 MK2 FAC, well, it's a gun I enjoyed. It's accurate, surprisingly quiet and has a comfortable stock, but if I were getting one I'd have mine in .22 and enjoy the ballistic advantages it offers. ■

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HIGH-TECH VORTEK

Phill Price tries a classic HW77 with some modern internal upgrades

A while ago I was contacted by Tony Burton of AGR Tuning asking if I'd like to try a spring-piston rifle into which he'd fitted Vortek tuning parts. Of course, I said, 'yes please', but Christmas, illness and life's ups and downs have meant that only recently have I had chance to test it. He sent me a 1990 HW77 which was in remarkably good condition for such an old rifle. It's certainly never been heavily used as a hunting gun. It even had that peculiar rear open sight which was a nightmare to remove. I fitted a scope to allow me to see the gun's full accuracy potential.

Externally you'd never know that this was anything other than a box-stock rifle, which surprised

me. I thought they might have added a discreet sticker in the way Venom used to. HW77s of this generation used the larger, 25mm piston which was slightly heavier than the original ones and I remember that many of us preferred the softer recoil characteristics of the earlier guns.

TUNE UP

AGR Tuning is acting as the UK importer for Vortek and I have to say that I know little about the manufacturer. Their website is packed with kits and parts to suit a huge range of high-quality airguns and they make some pretty bold claims about their spring guide systems. From the pictures I can see that the parts

are synthetic and guide the spring both internally and externally. This is claimed to make the gun smooth, greatly reduce friction and have a huge reduction on mechanical noise.

They also provide bearing surfaces that allow the spring to rotate as it expands, which should reduce the torque reaction as described by Jim Tyler this month on page 73

Tony fitted Vortek's PG2 Smooth glide kit which comprises their Dual-Guide parts, that appear to be synthetic spring guides, the Hi Yield spring, and the correct lubrication. In front of this he

added a VAG-machined piston seal and a new breech seal. These are sold as drop-in parts that any experienced airgun tinkerer should be able to fit with the right tools and a spring compressor.

There is endless debate about piston seals; one side arguing that machined ones are more precise and allow the use of engineering-grade synthetic materials, whilst the others argue for moulded seals with their more flexible 'parachute' lips. If I'm honest I've seen both work well, so it's a moot point.

NO CHANGE

I noted that the kit doesn't change »

"Cocking the rifle was pleasantly smooth and easy with no spring noise I could hear at all"



the piston stroke or affect its weight, which surprised me. The fashion today is for short-stroke modifications and stiff springs, but our own Jim Tyler has proven that this change has some negative side-effects that make the guns harder to shoot, so I'm glad Vortek left the stroke length alone.

Cocking the rifle was pleasantly smooth and easy with no spring noise I could hear at all. It really did feel like a hand-tuned gun. To get a base for my tests I chronographed the rifle with Weihrauch's own F&T Special which gave an average velocity of 576 fps, for a muzzle energy of 11.05 ft.lbs. This is ideal because if the rifle picks up velocity as it

runs in, it will still be legal.

Shot-to-shot velocity spread 18fps over 10 shots, which I've seen bettered by brand-new Weihrauchs straight from the box. Perhaps it needed more running-in to settle down. The Rekord trigger had been set well for my needs with a crisp second-stage that was a great help to accuracy testing.

"The firing cycle was certainly smooth and as the manufacturer claimed, very quiet indeed"

SAFE AND SECURE

After removing the open sight, I fitted a Sportsmatch one-piece mount with its recoil-arresting pin fitted to one of the drillings in



The spring guide can be seen through the cocking slot.

the rear of the scope rail. I always go for maximum security when mounting and this set-up is rock solid. My choice of scope was a

little off because the MTC Mamba Lite 4-16 x 44 is quite long and obscured the loading port, but that was okay just for test purposes.

What I really cared about was accuracy and recoil characteristics. Shooting from proper rifle rests on a bench, I touched the 77 the very least I could, allowing it to recoil in its normal pattern for every shot, rather than being influenced by my input. I chose the F&T Special, Air Arms Field and RWS Superdome as the pellets I felt were most likely to perform well in this rifle.

At 30 yards I was able to produce consistent sub $\frac{1}{2}$ " groups with the F&T Specials, far and away the gun's preferred pellet, which is probably about the limit of my ability with a springer, so plenty accurate enough. It's the first time for years that I've seen a serious gun that didn't like the Air Arms Field, with this rifle shooting groups closer to 1" with them. Perhaps the old barrel didn't like the modern pellet design.

The firing cycle was certainly smooth and as the manufacturers claimed, very quiet indeed. If you have a spring-piston rifle that needs a service and perhaps an upgrade I'd say that Vortek is well worth a look. The price for the parts fitted here is £68.60 plus £5.50 postage and packaging which seems very good value. Alternatively, you could send your rifle to AGR and they'll fit and set the parts up for £120 plus £25 for return insured carriage. ■

Cocking was so smooth.



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TARGET TIME!

Phill Price has some plinking fun with new targets from Jack Pyke

Jack Pyke has a fantastic reputation for supplying ordinary shooters like you and I with the kit we really want, at prices we can afford. They're perhaps best known for their clothes and boots, but their catalogue is huge, offering thousands of accessories to suit every shooting sport.

NEW MODELS

They've recently added more targets and they sent us a selection to look at. The first ones that caught my eye were super-heavy-duty ones that can be shot with FAC-power level rifles or

even .22 rimfires without damage, so a 12 ft.lbs. gun will do no damage at all. There are spinners and a novel one called the Chukka. This unusual design has four arms, each with a target on the end and, as the name suggests, you throw it out and shoot away. If you knock it over the next arm pops up and so on so that you can work it along the ground but you'll need a powerful gun to do it.

SIMPLE PLEASURE

More appealing to me was a simple spinner with a large target at one end and a smaller one at

the other. I've used one like this for years as a quick zero checker and a useful practice target. The small target represents the real kill zone size of much of our quarry, which for me is ideal.

DIY

There are also single-spinner versions that are attached to a post or a log with a heavy-duty, self-tapping bolt, which come in a choice of sizes. They can be attached to all sorts of wooden structures which can make for any size and shape range you like.

Alongside these, they have a selection of conventional paper

targets and metal holders that are the bread and butter of most shooter's needs. They also offer sticky targets to refresh metal targets, or stuck on target cards.

SHOT SPOT

Finally, they've added their new Shot Spot targets that change colour around the pellet hole, allowing you to clearly see exactly where your pellet landed. This makes seeing your group at long-range far easier. It's a fantastic selection and we've only showed part of it so visit www.jackpyke.co.uk to see the whole range. ■

"Shot Spot targets that change colour"



Jack Pyke offers a huge range of targets

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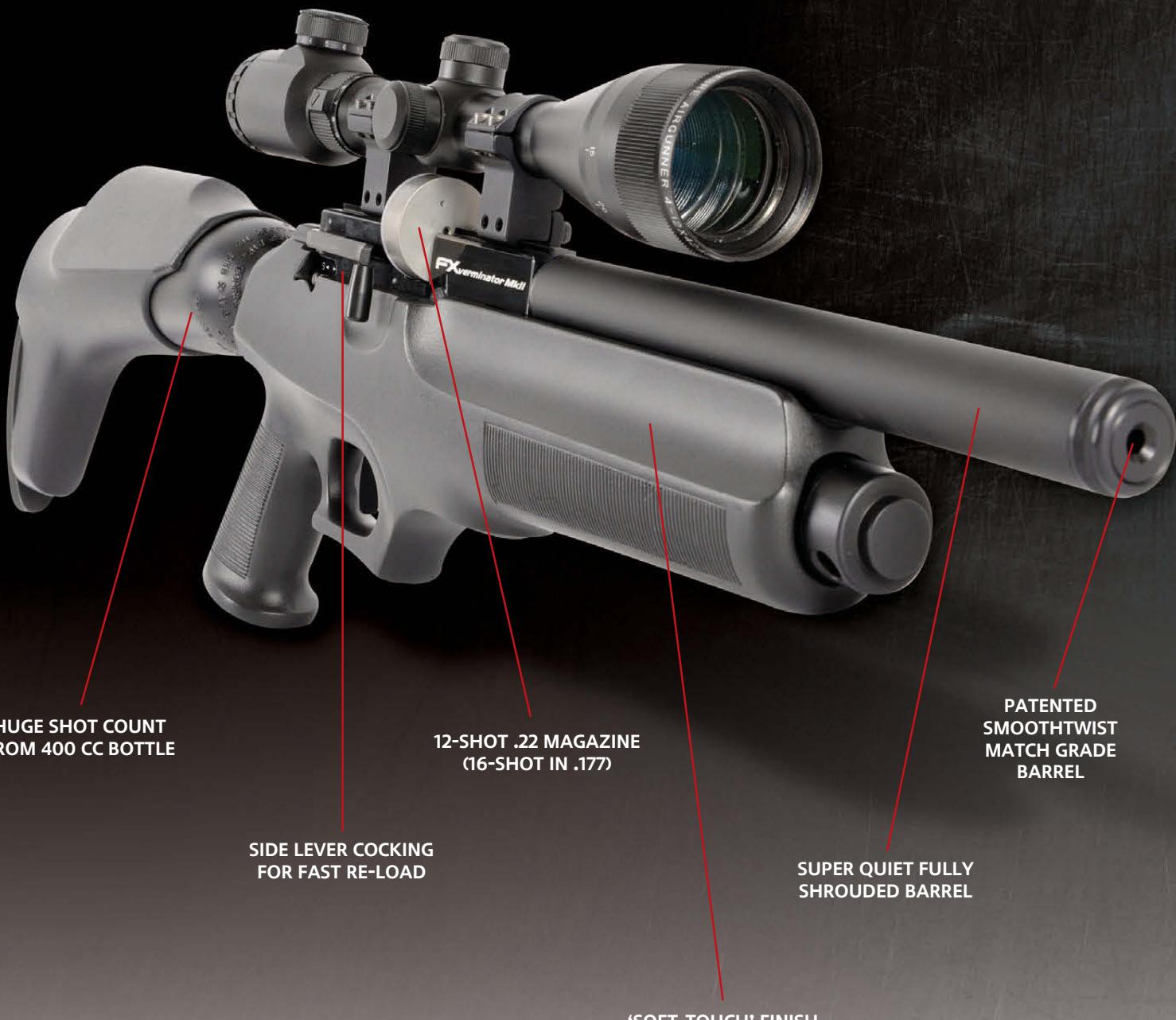
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STRENGTHS & WEAKNESSES

Danni Layton knows her weaknesses and intends to do something about them

Recently, I was asked this question - which I think is one we all should ask ourselves.

"Danni Layton - what are your strengths and weaknesses in airgunning?"

That question has caused me so much soul-searching that I've had to dig really deep and be honest with myself. It really made me think back to the very start of my airgunning journey and where I am now with this sport that I genuinely love and enjoy.

When a family friend first invited me on his hunting trips to local farms, I must have driven the poor man to despair. I was 15, acted like an over-excited puppy and always spoke loudly at the wrong moments. How he put up with me, I have no idea, but I'm so glad he did, and as time went on I slowly began to learn to be quiet, walk lightly and listen to his guidance.

FIRST PERMISSION

Time passed and a first permission to shoot on a large

farm came my way. I had learned all the basic skills, but at this point I still hadn't mastered one of the most important, which is patience.

I would work my way around the fields and hedgerows as though I was in a walking race, hell bent on winning gold, then get totally frustrated when rabbits

dramatically when a friend gave me some of his old airgun magazines. I would spend all my free time reading articles about hunting techniques, and take this information into the fields, which is when things really started to turn around for me and at this point I started having many more

put aside when I was invited to an open day at a local club where some of these guys and girls really knew how to shoot, and were soon giving me some fantastic advice.

It was so refreshing being around people who shared the same passion for shooting.

I was amazed to find that a large

"When the odd opportunity did come my way to take a shot, excitement would kick in and gun control would sometimes be forgotten"

seemingly appeared from nowhere and headed for their burrows at a rapid rate of knots. When the odd opportunity did come my way to take a shot, excitement would kick in and gun control would sometimes be forgotten, causing me to miss completely. I would get so down in the dumps some days and find an unsuccessful trip to be so frustrating that I'd be thinking about my next trip before I'd even left the field to go home.

Things started to change for me

successful hunting trips. I'd learned to use wind direction and available cover, but most importantly to slow down and use my eyes - and yes - I was finally starting to have PATIENCE!

CLUB MEMBER

At this time, I hadn't given any thought to joining an airgun club; being somebody who was out in the fields hunting I couldn't see how it would have any benefit to me.

These thoughts were quickly

number of the people there were also hunters who came to the range to keep their skills sharp and enjoy the company of other shooters. I came away knowing that becoming a member of a club was something I not only wanted, but needed to do. This still hasn't quite happened yet. What with raising three children and putting my time into hunting too, my life is definitely a juggling act, but one I wouldn't change for the world. I am in contact with a shooting range, though, and plan to



It doesn't matter which of my rifles I'm using, I simply love being out.

visit on a more regular basis in the coming months.

MATURING NICELY

Quite a few years have passed since I was introduced to airgunning and I've not only matured as a character, but matured as a shooter also. I know I still have such a long way to go and if I'm honest, I don't think you ever stop learning. Every time I read a magazine, scan the Internet or talk to a fellow shooter, there always seems to be new ideas that I can put into practise in the field. I am a very inquisitive person; my mind has to be kept busy and I have to set myself goals and challenges permanently. This is something that has seemed to benefit my shooting over the years. I won't claim to be an amazing shooter. I am human, I have days when I find it difficult and have to remember to breathe and be calm. I am like every single one of you guys and girls out there. If I get stuck on a topic I'm unsure about, I won't be shy. I'll be forever researching until I find the answer, or pester one of my shooting buddies until I have the information I need.

So this takes me up to where I am at this present time, with areas I'm aware need improving and things I could really do with help and advice with.

Being only 5' 2" there are times when holding and aiming a rifle can be difficult. Sometimes I find the reach to the fore stock can put a lot of strain on my arm, so I'll be looking into learning some new techniques that can help me with this problem that has been a

OFF TO BISLEY

I'm extremely excited! Some friends of mine and I have a day shooting at Bisley coming up, when we will be correcting some of our 'not so good' techniques under the tuition of our very own Terry Doe. I couldn't think of a more exciting opportunity to improve our skills than soaking up the knowledge and wise words of Mr Doe himself.

We are all eagerly waiting this

"I would just like to ask you all a question: What are YOUR strengths and weaknesses?"

struggle with some rifles from the very start of my airgunning journey.

Another bad habit I'd become aware of – my following through with a shot became non-existent, so to correct this I've started to shoot on a daily basis in my own small, back garden range. Training myself to follow-through with a shot automatically, with no awareness of me doing so, has helped me to shake off this bad habit I'd picked up.

date, with minds ready to learn and absorb any guidance he can give us. I am secretly hoping that I can have my arm surgically removed and a longer one put on to help me in my shooting, but I have a little feeling Terry won't be able to go ahead with this procedure, so all ears open will have to do.

The greatest thing about airgunning, be it with a pistol or rifle, is that you're always chasing that excellence and

trying to be the best you can. There is always so much more to learn, from techniques to fieldcraft. There is new equipment always coming on to the market, which admittedly can help us all, and while it's fantastic to see fresh ideas put into production, the foundations will always be good shooting technique and solid fieldcraft.

I hope to keep you posted on any improvements I have made and all things new I've learned, but before I go I would just like to ask you all a question: What are YOUR strengths and weaknesses? Dig deep, my friends, and let us all share our journeys into airgunning. I respect anyone and everyone who can throw their hands in the air and say, "You know what, Danni? I have bad habits too, which need improving. Don't we all?" To those who are always willing to learn and share information with fellow shooters, keep up the good work!

Let us know your stories and how you'd like to improve your shooting skills. We'd love to hear your thoughts.

For now, stay safe - Danni ■

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DR FINLEY

THE ROAD TO BECOMING AN AIRGUN MARKSMAN

Tim Finley helps a new shooter to get to grips with airgun ownership



I always wear safety glasses.

We all have to start somewhere on the road to being an airgun marksman, or indeed markswoman. My father knew I was interested in guns from a very young age. Growing up in 1970s, the TV shows I loved were full of guns, Starsky's semi-auto 9mm Smith and Wesson model 59 and Hutch's .357 Magnum Colt Python were uber-cool. I pestered Mum and Dad for a toy semi-auto like Starsky's so I could run around pretending to be him. Having an

shooting. My successes at winning prizes or just the speed and accuracy I showed with the BB-firing auto rifles only reinforced my desire to shoot.

TAKING CONTROL

My father sensibly figured out that he would take responsibility to teach me about safe gun handling and how to shoot. He had been taught to shoot in the Army during his national service, so he knew how to get me started. He bought me a second-hand BSA Super



Left: Glasses should offer good coverage and stay put.



Adjustable arms make a big difference to comfort.



There are lots of models to choose from today

Meteor with scope which he bought me the following Christmas because I'd showed him I could be trusted with a gun. He was a strict teacher, which you have to be when it comes to gun handling, but it did set me right for the rest of my life. Thanks, Dad.

Roll forward to today and I was asked by a friend if I would help him get an air rifle. He had always wanted a gun and decided that now was the right time to get one. I said I would assist him with the provisos that I also taught him safe gun handling and how to shoot. He readily agreed and then really shocked me by asking some very, very important questions, such as, where he could shoot, and what the laws were on keeping airguns. Not many new shooters immediately think of such things; they're usually just concentrating on the fact that they would like to shoot and how to do it.

POWER

When it comes to gun ownership

"He was a strict teacher, which you have to be when it comes to gun handling"

Action Man I could arm with a Lewis machine gun, Colt 1911 or M1 Garand, helped fuel my interest too. It was on the fairground shooting arcades where it was soon apparent that I had a natural ability when it came to

Meteor, which to be fair had seen much better days. It did not matter that the stock was dented/split and the metalwork was showing signs of neglect, I still loved that first gun. Even more, I loved the brand new BSA Super

Any Co2 pistol will lose power in the cold and could fail to flatten its pellets.



pests. You may join an airgun or shooting club so you can shoot in a safe, legal environment. Clubs were high on my list of recommendations to my new shooting friend, because in a club you can learn a lot from fellow shooters. You may even pick up the competition bug.

BACK GARDEN RULES

There are laws governing where you can shoot, and some even relate to your own back garden. It is against the law, in England and Wales, to fire an air rifle within 50 feet of the centre of a road, if this results in someone being inconvenienced; i.e. shooting in your garden and the pellets ricochet on to the highway. The law also states that a pellet must not go outside the boundaries of the place you have permission to shoot. In your back garden that means over or through a fence. If you are supervising someone under 14 then you are responsible if a pellet leaves your garden, so it's essential you build a suitable backstop. You can use concrete paving slabs, wooden posts and a cheap bag of sand to make an excellent and very safe backstop for shooting on your property. Just putting a cardboard box full of rags up against a timber fence is a recipe for disaster, worse still is pinning a paper target to a wooden fence. Pellets shot at such things will eventually find their way out of the back of the box or through the fence.

Safe and effective backstops for lead pellets and BBs are covered and angled sand, or enclosed steel boxes. Pellet catchers and target-holding boxes are not that expensive and 30 quid will get you one ready-made, with multiple targets which you can reset by shooting the middle one. You do not even have to stop shooting to reset them. Simple metal boxes where a card target can be



inserted are even cheaper, at about a tenner.

KNOW YOUR PATCH

When hunting, it's all the more important to know your land, its boundaries and any other features, such as public footpaths in the area and residential housing. Where will your pellet be headed if you miss?

When shooting in the back garden, you and any spectators must wear eye protection. That's not to say you will get lead pellets flying back at you, but eyesight is a precious thing, and for the sake of a few pairs of plastic safety glasses it is just not worth taking a risk. When shooting steel or lead BBs you could find some come back in the shooter's direction, so

varied. It's all about being sensible with guns and thinking about just what you are doing with them. It's not rocket science and there is no excuse. I keep my airguns in gun cabinets, but I have those installed due to also having firearms.

FREE LOCK

Airgun firms who are members of the Airgun Manufacturers Trade Association (AMTA) provide a good locking device when you buy an air rifle from one of them. This is ideal for attaching the gun to a solid wall within a cupboard. Guns should never be stored in sheds or outhouses either; always store them in the house. Fix a solid ring to the wall with rawl bolts then, looping the AMTA lock through the trigger guard, attach this to the ring. Always store the gun out of sight so as not to entice those who shouldn't try to play with it. If you have expensive kit then a lockable steel firearm cabinet is the way to go. Do not forget the ammunition; pellets, BBs too, should not be stored near the gun; a petty cash box with a lock is

Higher power pistols like this always fire lead pellets.

Safety rules

- NEVER POINT YOUR GUN AT ANYONE
- ONLY LOAD THE GUN WHEN YOU ARE READY TO FIRE
- ALWAYS CHECK THE GUN IS UNLOADED WHEN PUTTING IT AWAY, OR GETTING IT OUT. ALSO WHEN GIVING IT TO OR TAKING IT FROM ANOTHER PERSON.
- NEVER LEAVE A GUN UNATTENDED
- ALWAYS BE SURE OF THE TARGET AND THE BACKSTOP. IS IT SAFE?

unloaded, then take it with you, again an AMTA-style loop cable lock can secure it to a table while you walk down if you do not want to carry it. A lock which just fits in the trigger guard to blank off the trigger is not adequate under the new law because it does not prevent anyone from taking the gun away. I do still use one when I am transporting guns and when plinking in the back garden. A lockable toolbox for electric drills can be used for pistol shooters in a back garden, but the box must be in a locked cupboard or secured to a wall when you have finished shooting.

My mate was not put off by any of the information I was bombarding him with. He is a sensible guy and understands the need for safe gun use. Next, we talked over just what type of shooting he wanted to do and which gun he thought he wanted, and which gun I thought he wanted; were they the same? Find out next month! ■

"... the Airgun Manufacturers Trade Association (AMTA) provide a good locking device..."

the wearing of safety glasses for everyone in the immediate vicinity is compulsory, meaning you must ALL wear them!

After my friend asked me about where to keep his new gun, I filled him in on the current UK laws regarding gun storage. From February 2011, the Crime and Security Act 2010 made it an offence for a person in possession of an airgun to fail to take 'reasonable precautions' to prevent someone under the age of 18 from gaining unauthorised access to it. Failure to do so can lead up to a £1000 fine, just for not storing a gun adequately, and that's before any incident which may occur because you have allowed unauthorised access to your gun and ammo. Please don't think I am being heavy-handed or a scaremonger here. There are easy and sensible measures you can take. They are many and

perfect and cheap.

When you're out and about with your gun, your responsibility to keep it safe does not end. When travelling I always lock my guns in their bags; not only does it prevent them from falling out but also deters the opportunist criminal. The AMTA lock can also be used to lock the bag onto a fixing point in the boot of the car. When shooting in the back garden never leave the gun unattended behind you if you go down to the target area. First make sure it is

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WHICH WAY DO I GO?

Are you new to the sport of airgunning? Perhaps you've been itching to get involved, but aren't sure which direction to take? One of the best things about this fantastic pastime is the range of options open to us, from hunting to shredding tins cans in your back yard.

In between the howling, tooth-rattling gales and biblical downpours of the last few weeks, there have been a couple of interludes in which the very finest of British winter weather has been allowed to settle on the northern landscape like a benevolent magic spell. Perfect, cloudless blue skies, iron-hard earth beneath a glaze of twinkling frost, and a stillness to the air that carries even the most distant sounds of the countryside with startling clarity. On days like these, the airgun hunter will stop at nothing to get

on to his or her permission; a few hours of solitude among the copses and hedgerows, when the sun is low and the shadows are long, are utterly priceless. Simply being out there, with your rifle, your flask and your own company is more than enough; a rabbit or brace of woodies in the bag is gratefully accepted as a bonus gift from nature.

FEEL IT

How you react to this potential scenario - how you feel inside - will determine to a large extent

Gerard MacConnachie tells us his philosophy on getting into airgunning



Having a large choice of targets keeps things interesting.

organic meat for the table is an honourable pursuit: the hunter has his or her eyes wide open, has respect for the quarry, and a greater understanding of the way in which modern society feeds itself than those who think meat grows on supermarket shelves.

We also do it because we enjoy

"Providing wild, organic meat for the table is an honourable pursuit"

whether you, as a new airgunner, will apply yourself to becoming an airgun hunter. Those of us who hunt, do so because it satisfies on a number of levels. Providing wild,

it. Hunting with an airgun requires great skill, which has to be learned and refined over a lifetime. The relatively short effective range of a 12 ft. lbs. air rifle requires the

shooter to get close to the target. That's not easy; you can't just blunder through the woods like a drunken grizzly bear. Most importantly of all, the kill zone of air rifle quarry species is very small. Long before you go live shooting, you absolutely have to be able to put pellet-upon-pellet

consistently on a paper target, at hunting ranges, every single time.

But it's not for everyone. If you do not feel a deep yearning to be out there with your favourite rifle, »

Many clubs have somewhere warm and dry for those cold winter days.



observing, learning and applying fieldcraft, then it's probably safe to say that hunting is not for you, but airgunning is about much more than this. Hunting is an evolution of shooting, a further development to which you may never aspire.

At the heart of every shooting discipline lies the same fundamental objective: the accurate placement of a projectile upon a designated target over a given range. That's it. Whether you're firing a .50 Browning machine gun cartridge at a target 1000 yards away, or a .177 wadcutter at a lemonade can with your Crosman Ratcatcher in the garden, it's the same principle.

ABSOLUTE PRECISION

Your success is measured by the degree of accuracy you can bring to bear with whatever you are using. In the case of airguns, this accuracy is measured in millimetres. It is a sport of absolute precision. The beauty of airguns lies in the fact that you can indulge this pursuit in so many ways.

NON-HUNTERS

I know seasoned airgun enthusiasts who never hunt, but spend their shooting hours at the local range, putting tin upon tin of pellets through their rifles, trying out each other's kit, testing brands of pellets from different manufacturers, and even testing the same pellet, but from different manufacturing batches. Obsessive, anyone?

These fellows will compare their target group sizes, measuring the cloverleaf patterns with micrometers. They snicker like schoolchildren when their pal's

latest group looks like a shotgun pattern, and then mutter darkly to themselves if their own last string was so much as half a micron out.

Target shooting is the principal discipline for airgun shooters, and is the means of entry to all other branches of the sport. As already mentioned, you cannot go after live quarry until your marksmanship is good enough, and your local range is where you learn how. From there, you may also decide that you want to pursue a specific path such as field target or its hunter field target spin-off, or perhaps that you want to aim for Olympic Gold in

10-metre air rifle. There are many options that will continue to reward you for a lifetime.

I urge all newcomers to seek out their local club, ideally before they've bought their first rifle. Few things in this life are certain, but I can guarantee you one thing: if you go to your local range, and present yourself with a modicum of civility, humility and enthusiasm, you deserve the very warmest of welcomes, and the world of airgunning will open up to you.

See you next month, but for now, be safe out there - and enjoy your shooting. ■

"you deserve the very warmest of welcomes, and the world of airgunning will open up to you"

There's always useful advice to be found if you ask around.



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LOOSE TORQUE



Jim investigates what causes a springer to have 'a funny turn', and how to cure it



When a coil spring is compressed, it not only becomes shorter, but its diameter increases a fraction, and the increase in diameter is caused by the spring effectively unwinding itself a little. Unsurprisingly, when the spring is allowed to extend as a shot is taken, the spring winds itself back up, and in some circumstances, that can cause the rifle to rotate around the axis of the cylinder.

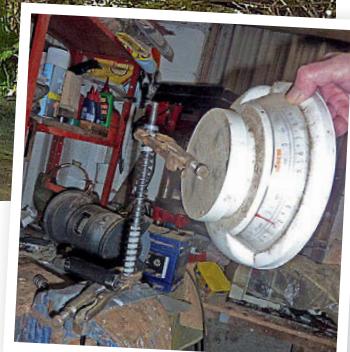
From the shooter's perspective, the rotation could be clockwise, with the scope turning to the right, or anticlockwise. On the few rifles that I've shot that rotated to a degree that I noticed, the turn was clockwise, though others report the opposite.

THE CAUSE

The rotation is a simple reaction to the force from the uncoiling of the expanding spring. If both ends of the spring were perfectly free to rotate, the rifle would not twist. In order for the expanding spring to

in the case of rifles with pistons that are free to rotate, the rear end must be anchored.

The spring end coils, however, are not physically anchored as in attached to anything, but high static friction between the spring



An old kitchen scale gave a rough idea of the spring torque.

"The rotation is a simple reaction to the force from the uncoiling of the expanding spring"

impart a twisting force on a rifle in which the piston is unable to rotate (when the cocking shoe runs inside the piston slot), one end must be free to turn, the other anchored to the rifle or piston or,

ends and the piston or back block can have almost the same effect.

It's worth mentioning that some people shorten mainsprings by cutting one end, but not collapsing and grinding the end coil, and

these unfinished spring ends are extremely likely to dig in and cause the rifle to rotate.

MEASURES

The first question is how much turning force the spring would place on the rifle, so I clamped a mole grip on the top of the spring, and measured a force of under 2 lbf with around 4" of leverage to turn the spring end. That's not a lot, and it seemed reasonable to

»



I turned two Delrin bearings to measure the static friction under pressure from the spring.

suppose that the force would increase dramatically when the spring was compressed, so I repeated the test with the spring compressed to 115mm. The force had indeed risen, but to around only 3 lbf, so it seems the torque is in the region of 1 Nm.

As the spring expands during a shot cycle, the force that it places on the rifle appears to be effectively constant, but its active mass is increasing, suggesting a fairly high initial acceleration that



The force from the coiled spring was less than that needed to turn the unlubricated Delrin bearings.

multi-tool.

CURE

The cure for rifle rotation is to find a way to reduce friction between the spring ends and the piston and back block and, to this end, it is not uncommon practice to place a thin Delrin 'slip' washer in the piston ahead of the Delrin top hat, and another on the spring guide at the rear of the spring.

Delrin has a low coefficient of friction (it's fairly slippery stuff) but, under high pressure from the

so, at the start of the piston stroke, the turning force would be insufficient to overcome the static

friction between Delrin washers, and be transmitted to the piston and/or rifle. The rifle would rotate.

As the spring extends, the twisting force reduces slightly, and it seems likely that in the case of



A pair of shim steel washers, with moly grease in between, will

The stiffest spring I possess (retrieved from a friend's HW97) places a force on the piston of 207 lb/f, if the piston stroke and preload add up to 115mm, so I compressed it to length, and the molybdenum lubricated Delrin bearings still turned with a force of just over 2 lbf, so it seems that two Delrin washers with moly grease in between should be slippery enough to prevent rifle rotation regardless of what mainspring is fitted.

Some people go a lot further than slip washers and lubricant, and fit needle roller thrust bearings, which certainly work, but whether they work any better than more basic alternatives is questionable.

I have been using pairs of high carbon spring steel shims with molybdenum-rich grease in between, one pair ahead of the top hat and another on the spring guide in rifles with non-rotating pistons, just a pair on the spring guide in rifles with rotating pistons; they do the job, and cost a few pence each. ■

"The cure for rifle rotation is to find a way to reduce friction between the spring ends and the piston and back block"

rapidly reduces.

SPRING END COIL

When the end coils of spring are flattened and ground flat, the grinding process usually deforms the steel, dragging the rear surface toward the centre of the spring, so reducing the diameter of the flattened section of the end coil. With a correctly-sized, synthetic spring guide, the end coil grips the guide, and makes rifle rotation much more likely. I always make a point of filing or grinding away the inner lip of the flattened section, using either a chainsaw file or a Dremmel-type

compressed mainspring, there will be interlocking of minute irregularities of the surfaces, which will increase static friction.

To find out the effect of static friction under pressure, I turned two lengths of Delrin rod which were long enough to get a mole grip on, and had holes that allowed me to place them on top of the mainspring on the threaded rod I use for spring testing. I compressed the spring to 115mm, then measured the force needed to turn the lengths of Delrin against each other at 3.5 to 4 lbf. That was slightly greater than the twisting force of the spring, and

rifles that exhibit rotation, the threshold of motion, which would reduce friction, is not reached.

I then repeated the test, but with a smear of high molybdenum content grease on all the bearing surfaces, and the force needed to slide one over the other fell to a little over 2 lbf, so it seems that a combination of Delrin slip washers and moly grease at either end of the spring should cure rifle rotation for the TX200's modest spring force of around 140 - 150 lbf. Some aftermarket mainsprings, however, place twice that force on the piston, so Delrin and molybdenum might not be up to it.

EXPLORING THE TRANSFER PORT

Part Two: Questions and Answers



Mike Wright continues his exploration of the transfer port, and describes a unique laboratory experiment that has added greatly to our understanding of the spring airgun firing cycle.



In Part One of this article, I explained how the velocity of the air flow in the transfer port has a controlling effect on the profile of pellet acceleration in the barrel, and also how the transition to choked flow determines the rate of energy transfer at different pellet positions in the barrel bore. The shape of the pellet velocity profile is dominated by this mode of transition, rather than bore friction, which has much less significant influence on pellet acceleration. A key fact is that the timing of the transition from unchoked (subsonic) air flow to choked (sonic) flow, and the consequent shape of the pellet velocity curve,

depends directly on the diameter of the transfer port. Smaller transfer ports advance the commencement of choking, whilst larger ports delay the onset until later in the shot cycle: the conclusion being that a grossly undersized transfer port may throttle the air to such an extent that complete energy transfer cannot take place within the available barrel volume. On the other hand, if the transfer port is much too large, the internal energy of the air may not have sufficient expansion time to convert effectively into the flow energy needed to drive the pellet.

Although we may now have a

much better understanding of the principles of operation of the transfer port, we still need to fill in some significant knowledge gaps before we can begin to specify the correct sizes and proportions of transfer port for any given springer, but, just what are these gaps in our knowledge?

KEY QUESTIONS ABOUT THE TRANSFER PORT

As the pellet accelerates in the barrel, the air-flow speed through the transfer port increases accordingly until it reaches the speed of sound (Mach 1). The transfer port is then choked and the flow speed remains at Mach 1.

This HW77 cylinder may well have had a close to optimum design.

In this mode, the temperature of the air within the port drops rapidly, converting internal energy to flow energy, which applies thrust to the pellet. The instantaneous temperature at the entrance to the transfer port depends on the extent to which the air is immediately compressed. The variation of this inlet temperature, within the few milliseconds of action time remaining after the pellet releases from the breech, is a very complex function of a number of flow variables and, with our current state of knowledge, we can only ➤

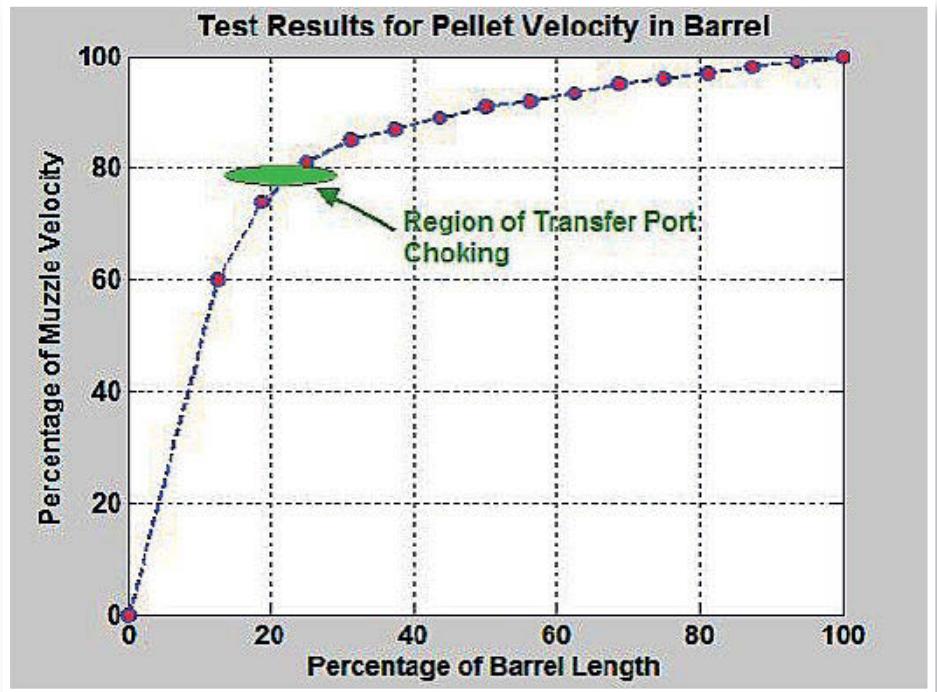


Figure 2: Typical Experimental Results for Pellet Velocity



ambient temperature. The precise point on the pellet velocity characteristic when this ensues will depend on the diameter of the transfer port: the smaller the transfer port, the earlier the onset of choking. As we shall see, the required transfer port diameter is immediately evident, once we have established the velocity of the pellet at the instant that the port chokes.

Both the measured and computed velocity curves are shown in **Figures 2** and **3** respectively. These graphs, which have been reproduced from Part One of the article, show the transition to choked flow occurring at between 70 to 80% of muzzle velocity. This is no coincidence: depending on the assumptions that are made, physics tells us that the correct transition point to achieve the most efficient overall transfer of energy is when the air flow velocity in the barrel falls within this region. Provided that the air is able to expand sufficiently in the barrel (i.e. provided the barrel is long enough) and if we can assume that the air expands without friction losses, the correct transition point to achieve the most efficient transfer of energy overall is theoretically at 70.7% of terminal (muzzle) velocity. This transition speed implies an equal contribution to total muzzle energy from both modes of flow;

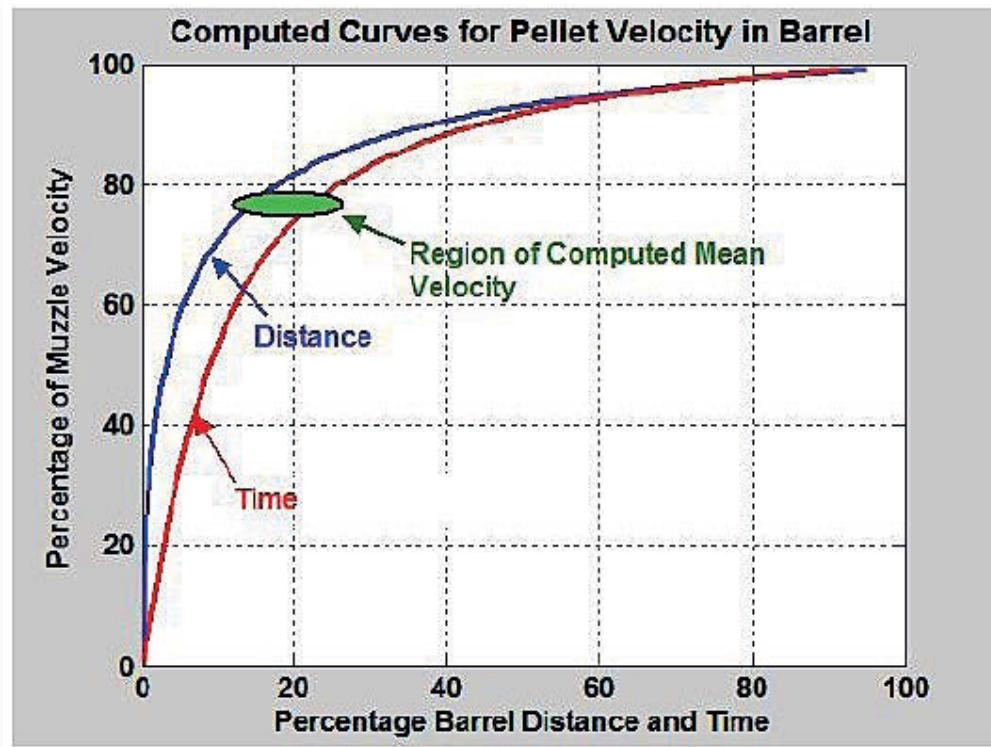


Figure 3: Computed Pellet Velocity versus Time and Distance

estimate broad temperature ranges rather than precise values. Fortunately, this is not a fatal restriction to understanding what is happening.

Between us, Jim Tyler and I have some combined test data which, when coupled with fairly secure information on the air temperature at the instant of pellet

release, allows us to extrapolate an air temperature at the onset of choking of approximately 600 to 700 deg C (i.e. a median of 650 deg C), depending on the interference fit of the pellet in the breech. Adding to this knowledge, from the experiment described in the next section, we can infer that the total temperature drop across

the port may well be around 150 deg C under conditions of supersonic flow. This suggests a port exit air temperature of something like 500 deg C, which gives us a value for the local speed of sound of ($Mach\ 1 = 20 \times \sqrt{(500+273)} = 556$ metres/sec, which is considerably different to the 'normal' quoted value of 342 metres/sec at

The HW55's short stroke would hint at it being sensitive to transfer port diameter, but its long barrel suggests the opposite. More experiments needed!



but friction losses change things a little.

An alternative approach, (www.me.mtu.edu/~jwsuther/erdm/pinchtech.pdf) which ties up with Jim Tyler's test data, suggests that a more realistic empirical value for the transition velocity is the average pellet velocity over the barrel length, which occurs at 75 to 80% of muzzle velocity on the computed curves. This represents a small shift in position, but still exactly in the same region of the pellet velocity curve. Exact numbers apart, the relevant fact here is: '*Sizing the transfer port to achieve choking at or near to the point where the pellet is travelling at its mean velocity in the barrel (70 to 80% of muzzle velocity) appears to give a close to optimum result.*'

It is important to note that, provided that the compression pulse is stretched sufficiently to allow adequate expansion and cooling of the air (i.e. in practical terms, provided the barrel is not too short), the exact value of the choke - transition velocity is not absolutely critical. This point gives rise to a couple of key conclusions: one practical and one theoretical. Firstly, a longer-barrelled rifle will be much less sensitive to variations in transfer port diameter than an ultra-short carbine; and, secondly, although the computed and measured velocity curves may vary a little

from each other, the correlation will be more than close enough for us to have confidence in using the calculated results to draw ensuing conclusions with regard to transfer port sizing.

Before looking at how to estimate the correct physical size of transfer port, two issues have to be considered. The first relates to the effective outlet area of the port. Owing to the inability of flowing air to instantaneously accommodate to sudden changes in cross sectional area, the projected area of the air stream contracts to a size somewhat smaller than the physical exit area of the port. This

port would need to be 10% larger, at 3.3 mm, to achieve the correct flow rate. (It is worth noting that these numbers are correct for transfer ports with abrupt sharp corners on inlet and outlet. However, if the transfer port corners are appropriately radiused to make them more gradual, the discharge coefficient can be improved to over 90%).

The second issue relates to the critical length of transfer port, required to support stable choked flow, without incurring significant penalties on muzzle energy. It is well known that air flow through very short tubes (e.g. one where

The essential difference is that, in sonic air flow, frictional energy losses are dominated by viscous shearing within the fluid body itself, rather than friction between the moving fluid and the stationary pipe walls (i.e. friction within the 'boundary layer'). This can be demonstrated by machining a shallow spiral into the bore of a smooth tube and measuring the pressure drop across the now-roughened bore, whilst holding air flow speeds in the region of Mach 1. If the pressure drop is then compared with that for the smooth bore, the measured pressure difference turns out to be

"The second issue relates to the critical length of transfer port,"

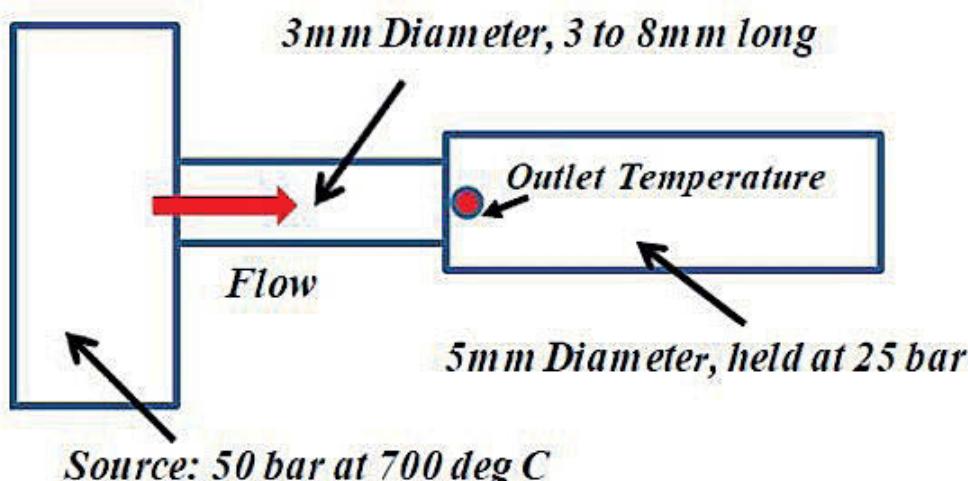
area reduction is called the '*vena contracta*'. (www.hep.princeton.edu/examples/vena_contracta.pdf). The *vena contracta* effect can be taken into account by multiplying the actual area by a 'discharge coefficient'. Discharge coefficients are tabulated, for different flow geometries, in standard reference books. For our application, the appropriate discharge coefficient is given as 80 to 84% of flow area, suggesting an effective *diameter* reduction of about 10%. So, for example, if we needed a transfer port with an effective diameter of 3.0 mm, the actual physical diameter of the

length is less than the diameter) is unable to choke and generates low thrust. On the other hand, flow friction in very long transfer ports gives rise to concerns regarding unnecessary energy losses. Unfortunately, much of the freely-available information, which offers guidance on estimating these friction losses, proffers inappropriate 'friction factors' which do not apply to the air gun transfer port. This is because they were originally derived for low-speed hydraulic piping networks, where they work well, but not for very high-speed air flows, where they do not.

small (around 5%), which indicates only a very modest contribution from boundary layer friction. A dearth of available experimental data adds to the confusion, but it is a fact that the indiscriminate use of 'standard' hydraulic friction factors can be very misleading, because of the potential for very large errors in any estimate of the energy losses, which are assumed to be caused by boundary friction.

In his experiments with variable length transfer ports, Jim Tyler discovered a puzzling phenomenon, where the muzzle energy of his test rifle collapsed as »

Figure 4: The Transfer Port Experiment



Port Length (mm) [Diameter = 3 mm]	Outlet Temperature (degC) [Inlet @ 700 degC]
3	636
4	612
5	568 (Choked)
6	557 (Choked)
8	551 (Choked)

he lengthened the transfer port to a critical point, only to recover when the length of the transfer port was increased further or when a different pellet was substituted. It transpired that Jim had unwittingly fitted a transfer port with a length that was some critical multiple of the length of the cylinder pressure pulse. This resulted in the creation of a standing-wave pattern within the port, which effectively blocked the air flow to the barrel, resulting in a significant fall in muzzle velocity. In the field of air guns, this is an original and significant discovery by Jim and well worth being aware of; but I initially thought that its occurrence could probably be regarded simply as very unusual and unlucky coincidence of dimensions. I now have some doubts about this being a one-off, since Jim has recently had a similar experience with another rifle, which exhibits the same variation in muzzle energy under certain conditions. This standing-wave effect is yet another intriguing facet of the springer that

might well be deserving of a closer look in due course.

There is no doubt, however, that the more prevailing question about transfer port length is the question of the minimum length of port required under normal conditions. Many investigators have, logically enough, formed the view that the shortest must always be best, because of potential friction losses. On the other hand, too short a length will not support stable air flow. So what is the lower limit and how can we find out?

technicians, using the kind of laboratory facilities that a 'home tinkerer' like me simply does not have access to; and I am immensely grateful that they allowed me to badger them into it.

Figure 4 depicts the schematic of a test rig, designed to imitate the supersonic flow of air through a transfer port into an air rifle barrel. The experiment conducted on the rig was designed to obtain hard data on the temperature reduction in the air flowing through the port and also to

"The tests were conducted for me, by professional engineers and technicians,"

AN EXPERIMENT ON THE TRANSFER PORT

The transfer port experiment, which is described here, was aimed at establishing what happens to the temperature and flow regime of the air as it passes through the transfer port. The tests were conducted for me, by professional engineers and

investigate the effect of transfer port length on choking. The onset of choking is indicated by a noticeable reduction in the temperature of the output air flow, as the air gives up some of its internal thermal energy for conversion into flow energy. It is this flow energy which is capable of doing work to accelerate the pellet. A specific objective,

therefore, was to determine the minimum length/diameter ratio for which the transfer port is able to choke.

Owing to the fact that the actual air pressures and temperatures within the springer are generally unknown, will vary from gun to gun and, to my knowledge, have never been directly measured, some real doubt exists about the actual conditions in and around the transfer port. On the other hand, calculations based on adiabatic compression and expansion can put us in the right ballpark and this how the source pressure and temperature in **Figure 4** were decided upon by the engineer who conducted these tests on our behalf. Bearing in mind that the primary aim was to find out when the temperature dropped and by what proportion, rather than actual temperature values, the chosen source temperature, was not too critical. On the other hand, the maintenance of an approximately 2:1 ratio of inlet-to-outlet pressure was essential to initiate sonic flow conditions.

The controlled pressures and temperatures are indicative of established conditions for real guns and the nominal port diameter of 3mm was chosen to be in the mid-range of diameters encountered from a variety of manufacturers. Consequently, I think that the results can be regarded as reasonably authoritative. The transfer port length was varied from 3mm to 8mm and the outlet air temperature recorded for each case. The resulting

measurements give us two vital pieces of information: the minimum length of port required to support airflow at Mach 1 and some idea of the temperature gradient across the transfer port.

From the results included in **Figure 4**, it is apparent that the outlet temperature of the air reduces suddenly, by an additional 80 deg C or so, as the



P1040035. Many people thought the LGU's 2.6mm by 26.9mm long transfer port was too narrow and too long, but it worked, suggesting that existing thinking on transfer ports was flawed.



Jim Tyler's virtual transfer port revealed that standing waves can form if the transfer port length is a multiple of the cylinder pulse length.

air flow chokes. The magnitude and abruptness of this temperature change was a surprise: neither was predicted to any degree of accuracy by 'text book' calculations. In particular, the temperature drop measurements were much higher than expected, but they were double checked for validity and found to be correct.

As a result, we now know that: '*A transfer port needs to be specified with a minimum length*

of one and a half times its diameter, in order to effectively convert internal gas energy into

"an invaluable guide to the absolute minimum length of port"

directed flow energy. The onset of choking is indicated by a large and sudden temperature change between inlet and outlet.'

Being based on a single set of tests, this cannot be regarded



The LGU's 2.6mm by 5.5mm long port was more in keeping with contemporary thinking on the ideal transfer port size.

as a universal rule. It does, however, provide us with an invaluable guide to the absolute

role of transfer port modification in the tuning process, by looking at the way it interacts with other parameters, including spring energy, cylinder volume, piston mass, piston stroke and barrel length. We will take a look at what has been discovered and ask how we can use this new knowledge to calculate the correct size of port and minimise the amount of trial and error involved in establishing an improved state of tune, or even a new design. ■

minimum length of port; although a safer bet may well be to specify twice the diameter rather than one and a half times.

In Part Three, I'll illustrate the

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REMINGTON EXPRESS RIFLE .177, very accurate, very little use, in pristine condition with scope or red dot. Received very good review in *Airgun World*. £140.00 Tel: 07890781668 (Leics).

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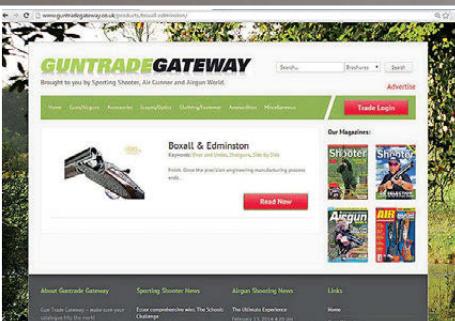
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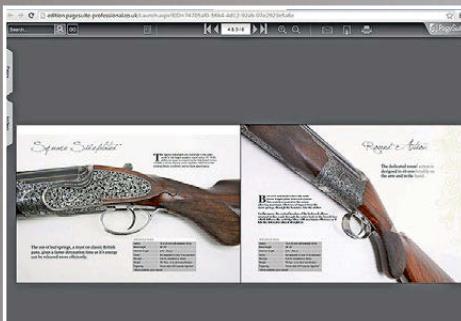
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STAR PERFORMER

Tim Finley loves his HW45 but likes this one even more

Weihrauch launched the HW45 Silver Star in 2009, and more recently the Black Star. The Silver Star has several features which set it apart from the standard HW45 pistols that preceded it. You cannot fail to identify the pistol model as the words 'Silver

Star' are engraved in flowing script behind the HW45 logo on the left-hand side of the action.

First, I'll cover the operation of the gun; it is a spring-powered air pistol with an over-lever cocking action. The barrel is housed in this top section, which also has the open sights on it and an 11mm optical sight rail. The

top section hinges from the front end of the pistol and is held in place by a pseudo hammer at the rear of the action. To cock the action the safety catch, positioned just behind the trigger, must be applied. The safety is not an automatic one, so get into the habit of applying it before commencing the cocking and loading

sequence. It's a small, ribbed lever that has an S for 'safe' and a red dot and F for the 'ready to fire' position. There is only a red dot warning you it's ready to fire on the left-hand side of the action. Flicking the lever back away from the trigger blade into the safe position can be done from either side of the action, no matter if you are left- or right-handed because the levers are ambidextrous.

As with all HW45s there are two power levels available to the shooter. Pulling the barrel section up to almost 90 degrees to the action and engaging the piston latch sets the first power level. On test this gun came in at 1.7ft.lbs. with .177 7.9 grain pellets. Pulling the top section all the way out, the power went up a full 2ft.lbs. to 4 1/2. This gain is for only a further 17mm of movement on the piston. The differing power levels affect the trigger pull, as you would expect. The less spring pressure on the trigger sears, the lighter the trigger pressure will be. At 2 1/2 ft.lbs. the factory-set trigger measured in at 1.67kg (3lb 11oz). At full power the trigger weight

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"...a wraparound laminated wood grip is done in a target-style and looks really stunning"

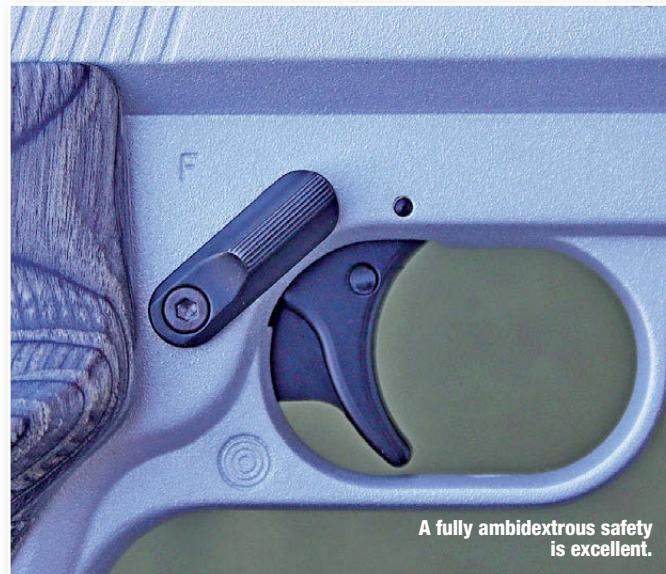
SPECIFICATIONS

Manufacturer: Weihrauch
Country of origin: Japan
Distributor: Hull Cartridge
Tel: 01482 34257
Model: HW45 Silver Star
Type: Spring piston
Barrel length: 170mm
Calibre: .177 or .22 (.177 on test)
Action: Over lever
Sights: Rear notch – adjustable, with fibre-optic elements front and rear (with dovetail optical sight ramp)
Trigger: Two-stage adjustable
Trigger weight: 1.7 to 2.3kg
Grips: Laminated grey wood target-style stippled for grip
Overall length: 280mm
Weight: 1.1 Kg

RRP £294.00

went up to 2.3kg (5lb 3oz). The trigger adjustment screws on the HW45 are both situated on the front face of the ribbed trigger blade and can be accessed via a hole in the trigger guard. The top screw alters the second-stage position, shorter turn to the right, longer turn to the left. The bottom screw is the weight; turning in will increase the trigger weight and turn to the left to lighten the trigger. The gun comes with a comprehensive instruction guide and spare 'O' ring for the transfer port. It also has an Allen key which fits the trigger adjustment screw. The main upgrade over the base HW45 is the grips. Gone are the slab-type covers on each side, to be replaced by a wraparound, laminated wood grip; it is done in a target-style and looks really stunning. The layered wood is in differing shades of grey and the shape is well sculptured having a stippled finish to the lower section. This bottom half swells out to a large-section butt cap.

When shooting the Silver Star you can see where the extra money went, because the grip transforms the feel of the gun; I know I own a standard HW45. When looking at a HW45 you can ask yourself two questions. One, is



A fully ambidextrous safety is excellent.



The fibre-optic elements really aid the sight picture.



Here we can see the transfer port.



The broad trigger is a delight to use.

"shooting the Silver Star is when you get to see where the extra money went"

it really worth the cost of a rifle? And two, Is the Silver Star model superior to the base model? The answer to both of those questions is an emphatic 'yes'. Initial tests in my loft range at six yards gave me an 8mm, centre-to-centre, five shot group with wadcutter match pellets, so there was no need to lighten the trigger from its factory settings. I recommend that you use a two-handed grip with any HW45 pistol. With a power of 4 1/2 ft. lbs. the Silver Star has all the punch you will ever need, with the added bonus of a lesser power level for indoor target shooting and plinking.

It is comfortable as a single-handed shooting stance too, I just recommend the two-handed style due to the HW45s weight.

The ambidextrous grip is not a perfect fit for both left- and right-handed shooters, but as a right-hander it still felt very good to me. The compromise in dedicated right- or left-handed shooters design is minimal and whoever did design it did a good job. You can tell they spent time on it; the way the angle of the front top section of the grip follows the angle of the safety catch when in the safe model is just one example of their deft touch. It really is a comfortable gun to

shoot compared to the plain grips of the standard model. As I wrote earlier, I should know, I own a standard HW45. It has a scope/ red-dot sight mounting dovetail on the front half of the top cocking lever, which extends all the way to the front of the gun, even past the front sight post. Fitted with a scope it would be fantastic and you would make full use of its power.



Pulling back the fake hammer releases the slide.

THINGS TO THINK ABOUT...

- IT MAY BE AS EXPENSIVE AS A RIFLE BUT IT IS A MUST-HAVE FOR ALL TRUE AIR-PISTOL FANS

COLD COMFORT



Phil Hardman freezes to earn a very small bag

Back in October I predicted a relatively easy winter, with mildish temperatures, and no real snow. My wife and kids had been banging on about building snowmen all through November, but I'd remind them that the acorns and pinecones said no snow this year, or at least not much. They laughed of course, thinking I was messing with them, but I really wasn't.

The harvest wasn't a heavy one round here this year, and even the animals seemed in no big rush to prepare for winter. Every other week since Christmas, I've heard reports of impending doom,

with snow and heavy winds combining to create apocalyptic blizzards that would freeze anything they touched, but I've

that I was wrong and that we'd get a nice good covering of snow, and bless Mother Nature, she has really tried. It has snowed a few

this piece, in the hope against all hopes that snow would fall and I could get out the snow suit, white bandages for my rifle, and get a proper, full-on, snow hunting piece done. I love it, even though it's only a few days hunting a year, if I am lucky. I spend months prepping for it, painting leafy suits white, looking for nice white gloves, making sure I have stuff to camo the gun, even thinking about it now gets me excited.

Unfortunately, my deadline means I have run out of time this month, so instead I had to do a muddy, slightly sleety, cold, wet piece, which isn't quite as

"I remained hopeful that I was wrong and that we'd get a nice good covering of snow"

still been going out without a hat and gloves, and still riding my motorbike, despite the prediction of certain death lurking behind every cloud.

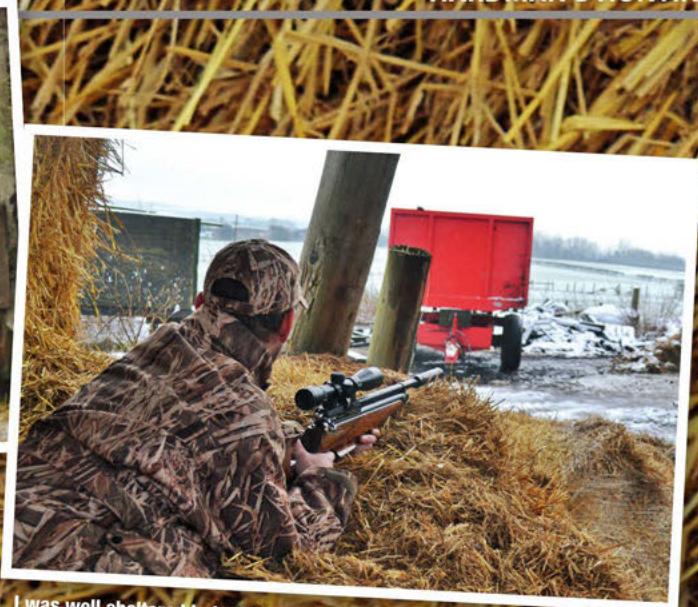
However, I remained hopeful

times, but it just won't lie, or if it does, it's about 1cm thick and gone within 20 minutes.

I have watched the weather forecast with my fingers crossed, each day putting off the writing of



There was snow, but not much.



I was well sheltered but still had views all around.



glamorous, I'm sure you'll agree.

MAGPIE MENACE

Snow or not, my plan remained the same, to try to bag some magpies that were raiding the farmyard to steal food, and making a nuisance of themselves. The farmer hates magpies, and every winter they begin hitting the yard in greater numbers, so now is the best chance I have of thinning out the adults before they breed in the spring. Any kill now, is a potential five or six that I won't have to deal with in the summer.

The farmyard at this time of year is usually frozen solid and easy to walk on, but this year's daytime temperatures are enough

to thaw it and it makes for a real mess, so I slipped and slid my way through, with very little chance of catching anything unaware, due to the noise.

It was a cold day, and even before I had got into position I was feeling it in my hands. I decided to

anywhere else, but I have ambushed magpies from here on many occasions, so I know it works too.

With the rifle rested on a bale in front of me, I settled in ready for the long wait, tucking my chin into the collar of my jacket and getting

magpies would come eventually, if I could just stay warm enough, for long enough, their hunger would get to them first. I sat watching a female blackbird fly in and out of the main shed as sleet began to fall.

The farm cat tiptoed carefully

"A split second later a magpie appeared and swooped down onto the blackbird's perch"

set up in the bale shed, which is nicely covered but provides many different angles of fire and also lets me move around a bit, should I need too. My main reason was, it simply looked warmer than

myself comfortable. With the exception of a couple of pheasants, nothing had stirred in the yard as I came through, so I wasn't sure how long a wait I would have, but I knew the

through the mud, sending the blackbird into a frenzy of alarm calls as it disappeared over the hedge on the opposite side of the yard. A minute or two passed before the blackbird made a



I'll use any cover to hide my approach.



I spotted jackdaws but not before they spotted me.



cautious return, perching on one of the rooftops and visibly searching for the cat, its head tilting one way then the other, looking all around. The coast must have been clear because it soon dropped down onto a piece of machinery in the yard, and then resumed its trips into the main shed.

MR BLUE SKY

The sleet stopped and suddenly the sun shone across the yard in full force. I was shaded, so couldn't feel its warmth, but I felt better for seeing it, even if it was just for a few minutes. Mrs Blackbird was still going about her business in the yard, and keeping me occupied, when suddenly she stopped, eyes to the sky and began shrieking as she took to the air.

A split-second later a magpie appeared and swooped down onto the blackbird's perch. I was caught totally by surprise, and, as

it sat within full view of me, I didn't really dare move, not even to raise the rifle. A couple of tense seconds passed as I debated my next move, but the magpie took the initiative and dropped to the floor and made its way to the cattle sheds. I tried to track it through the scope of my Daystate MK4 iS as it hopped and loped its way across the yard, but as it disappeared under the feeders I lost sight of it.

The sound of another chattering from the roof above me told me that it wasn't alone, and as the seconds ticked by, more arrived in the area, calling and squawking to one another, as if egging each other on to come down into the yard. This time I had the rifle ready, rested on the bale, shoulderled, good to go as soon as the next target presented itself. The mob now surrounded me on all sides and I sank lower into the bales in an effort to conceal myself further.

Suddenly, a particularly brave bird swooped down into the yard and perched on one of the fences at the front of the cowshed, 25 yards away. I locked onto it instantly, centring my scope just beneath its eye to allow for the closer distance than my 35-yard zero point, and steadied my breath as I let the shot go. The rifle's muted report bounced off the buildings around me as the pellet struck its mark. The magpie lifted a few inches off its perch, frozen solid and stone dead as it flopped to the floor beneath. I quickly shuffled the bolt on the rifle to slot another pellet into the breach, as the remaining magpies went into a frenzy all around me.

If you have never experienced this first hand, it really is a sight to behold, chattering and shrieking squawks seem to emit from every direction as birds circle, hop, and flit from perch to



The cold really got to me in the end.

"My wife calls this me growing up; once upon a time I'd have stayed there until I froze solid"



perch, almost hysterically. They focus all of their attention on their fallen comrade so it's usually a perfect opportunity for a second strike.

I stayed put, waiting for my chance as the mob continued its frenzied cries. Suddenly, the first of what became a steady flurry of snowflakes began to fall, which quickly broke up the magpies' mourning party and left me to reflect on a missed chance to really capitalise on my first kill. I didn't bother to make a retrieve. I hoped that the dead magpie might still act as a decoy to the rest, should they return, and so I settled in once more and got myself comfortable.

SAY HELLO

As time passed, the farmer came into the yard to do some work, so after saying hello and exchanging pleasantries, I decided to have a little stalk around the back of the yard. The snow had stopped

falling but had left a nice white coating on everything, except the muddiest areas, and I was starting to wish I'd brought my snow suit after all. It's typical; I've waited weeks for it to be white enough to make it worthwhile wearing my white camo, and on the actual day of the hunt, the snow finally falls heavy enough, while I am already out!

I cracked on regardless of my being annoyed slightly by Mother Nature and her sense of humour, and hoped she'd make up for it by offering me a few more targets. As I rounded the corner of the central barn, I spotted a pair of jackdaws in one of the trees on the outside edge of the yard, overlooking a horse paddock. 'Game on', I thought, and brought the rifle up on aim, but it quickly became apparent that I had been rumbled as both took to the sky. I'll admit it was my fault. I was cold, my mind wasn't on it and it took me a few too many seconds

to spot them, but that's what happens sometimes, especially in the winter. You're not just up against your quarry, you're up against the elements too. In short, they were winning and the cold was beginning to get the better of me.

I resumed my position back in the hayshed to try to warm up again, but as I sat shivering constantly, I asked myself why? Was it worth one more kill? What could I achieve today that I couldn't do tomorrow, with more layers on? My wife calls this me growing up. Once upon a time I'd have stayed there until I froze solid, but sometimes you've just got to know when to call it a day, and it was time.

A single magpie isn't really the stuff of dreams but that's hunting, especially for those of us who hunt through the winter, and you have to take your victories where you can. Never mind, it'll soon be springtime. I can't wait! ■



Gloves. Ever heard of them Phil? Ed.

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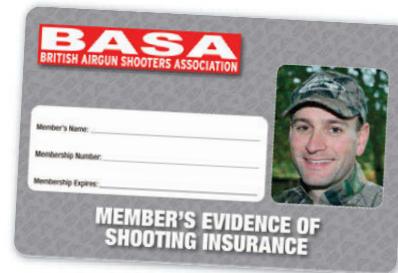
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TAGINE - IUS

Rosie Barham goes all exotic in her search for the ultimate rabbit dish

My friends and family never have a problem buying presents for me. Kitchen equipment of any description is always a safe bet and I love it when they find something a little unusual. I was given a personalised rolling-pin last Christmas, bearing the legend 'Rosie - Queen of the Kitchen!' which is on display because I can't bring myself to use it in case the engraving wears off. Another friend bought me a new tagine. I bought one years ago, when they were trendy, and it was quite expensive then, but nowadays they're mass-produced and cheaper to buy. I Googled mine,

only because I wanted to tell you how much you might expect to pay, and found that it cost £15, which is cheaper than a good saucepan – and well worth it for its unique style of cooking.

"Low heat for several hours is the secret to tagine cookery"

Meat cooked in one of these pyramid-shaped pots is kept moist and succulent because of the way the cone-shaped top condenses steam and returns it to the dish. You use less water than in an ordinary lidded casserole,

although slightly more oil, but there's a reason for that. Using 100ml of a good olive oil, and 150ml of stock gives you a thicker sauce, and because the lid is kept on for the duration, the flavour is

find - and can maintain a very low simmer for hours at a time, then it's best to place the loaded tagine into a cold oven and then turn the heat on, so the food reaches a simmer slowly. The long cooking time gives the flavours a chance to develop and the results are fragrant and delicious.

I really rate tagine cookery, not only for the fantastic flavours, but also because you bung everything in at once and walk away from it for half a day. By the time it's ready, the whole house is filled with comforting, spicy aromas - wonderful to come home to after a tramp through the woods on a cold afternoon. ■

METHOD:

Mix ginger, cumin, all spice, turmeric, salt and pepper to a paste in the olive oil.

Rub rabbit pieces with the spice mixture.

Leave to marinate for a couple of hours, or overnight.

Add sliced shallots and garlic, cinnamon stick, chickpeas, tomatoes, honey and sweet chilli sauce to the tagine.

Lay the rabbit pieces on top, include the marinade.

Add stock and simmer for four hours in a very moderate oven - 150°C/Gas Mark 2/3.

If there is too much liquid after cooking, drain into a small saucepan and reduce by half, before replacing into the tagine

Tagine is a unique method of cookery. The condensing of liquid creates moist, rich and flavoursome food.



INGREDIENTS:

One rabbit, jointed

Two shallots, sliced

Tin of chickpeas

Tinned tomatoes

100ml olive oil

One teaspoon each of ginger, cumin, all spice, turmeric

Salt and pepper

Half a cinnamon stick

Two cloves of garlic, finely sliced

1 tablespoon each of honey and sweet chilli sauce

150ml chicken stock.

Clean your tagine with warm, soapy water, by hand. Do not put into a dishwasher!



Rabbit, shallots and garlic, stock pod, cinnamon, olive oil, chilli sauce, honey, chickpeas,



Mix spices with oil to make a paste and massage into the rabbit.



Rabbit should be slightly coloured by marinade.



Add all other ingredients to the tagine.



Lay rabbit pieces on top.



Add stock and oil.

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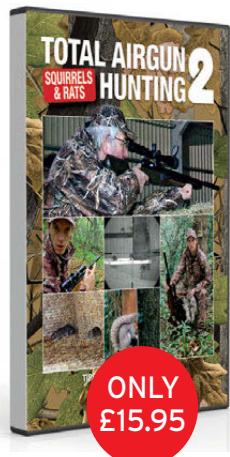
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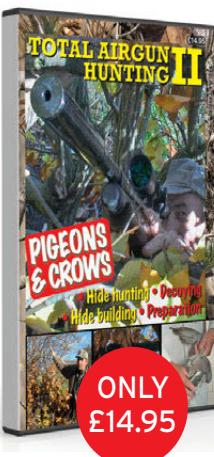
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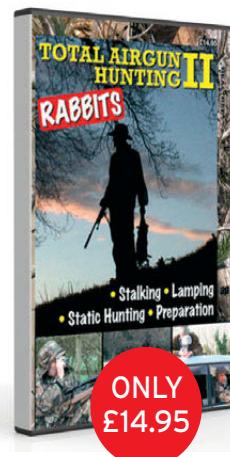
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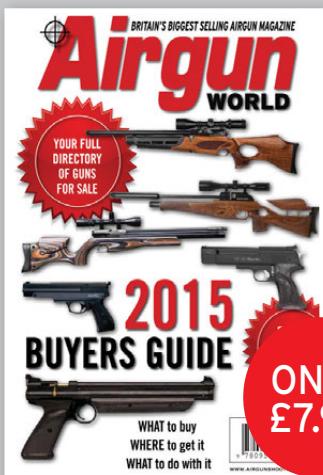
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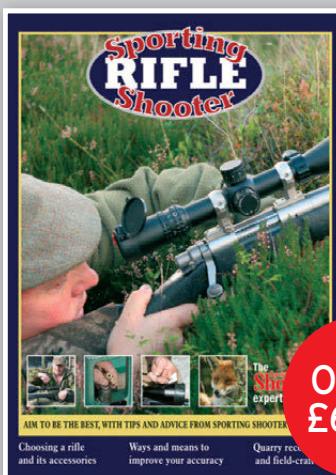
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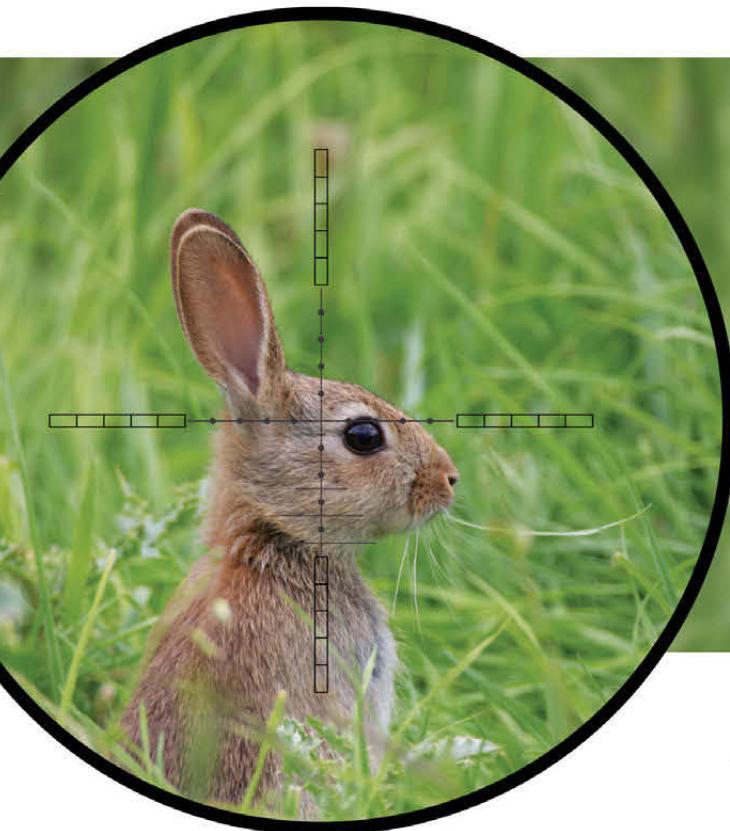
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